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*The Dublin journal of
medical science*

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THE
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MEDICAL SCIENCE.

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EDITORIAL ANNOUNCEMENT.

THE EDITORS have much pleasure in announcing that arrangements have been made to publish, in consecutive numbers of the Journal—commencing with that for January, 1877—the Lectures recently delivered before the King and Queen's College of Physicians, by DR. BROWN-SÉQUARD.

The subjects of the Lectures are—"Anæsthesia, Amaurosis, and Aphasia, as effects of Brain-disease."

November 30, 1876.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Case of Retro-peritoneal Cancer, accompanied by Cancer of the Navel.* By CHARLES A. MACMUNN, B.A., M.D., Univ., Dub.

THE following case, although deficient in its clinical history, is interesting pathologically, especially from the occurrence of cancer of the navel:—

S. N., a widow, aged sixty-three, was first seen on March 8th, 1876, at her own home. On entering the room her attitude arrested my attention. She was stooping and quite unable to stand upright, as any attempt to do so caused severe pain in the back and abdomen. Her complexion was sallow, but the sclerotics were white; face not much emaciated; tongue red; pulse 90. An unpleasant mouse-like smell filled the room, which followed her when she crawled upstairs to her bed. On examining her there the legs were found enormously swollen, pitting on pressure, the skin had broken on the inner aspect of the left leg, just below the knee, and serum exuded from it. The lymphatics in left groin were of stony hardness, and considerably enlarged. A hemispherical, purplish tumour, about the size of a plum, of firm consistence, having two small ulcers with uneven edges on its surface, occupied the position of the umbilicus; it could be easily isolated by taking up a portion of the surrounding integuments in the fingers, and hence appeared to have no deep-seated connexion. The skin surrounding

it for a small distance was harder than natural. Abdomen clear on percussion; hepatic dulness normal; on endeavouring to feel the edge of the liver the fingers sank into the abdominal integument, and this œdematous condition prevented palpation yielding a satisfactory result. No evidence of ascites; splenic dulness normal; heart and lungs healthy. The urine was not examined, as the patient, a few hours after she was first seen, became comatose, and died on the 10th. She informed me that she had passed very little water for ten days previous to my having seen her. A few hours before death a strong urinous odour was perceptible from the body. She died after a slight convulsion. From the little that I could learn from the patient I found that she had been ill for two years; that her illness commenced with abdominal pain, followed by swelling of the left leg and a "lump in the groin." In May, 1875, she consulted Dr. C. A. Nankivell, who investigated the case with great care, and who has been kind enough to inform me that he found œdema of the left leg, enlarged lymphatics in left groin, the uterus and rectum healthy, and that a careful examination of the abdomen gave negative results; his diagnosis was "a deep-seated, malignant tumour in the abdomen."

A friend of the patient informed me that the latter told her that she had hurt her abdomen fifteen months ago leaning over the back of a chair, and soon after noticed "a swelling and tenderness of the navel."

Autopsy, 13 hours after death.—No rigidity; emaciation moderate. On cutting into the umbilical tumour it "creaked" under the knife. It was of a glistening bluish- or grayish-white colour, mottled with yellow, and of very firm consistence; it had extended through the abdominal wall, and formed a slight projection on the peritoneal surface of the latter; it was not connected with any other growth. A few small, round, whitish nodules were noticed midway between the umbilicus and pubis. The omentum—considerably shrunken—was studded with nodules of small size, and one large one, measuring $2\frac{1}{2}$ in. \times $1\frac{1}{2}$. It was identical (to the naked eye) with the umbilical tumour.

The mesentery contained similar deposits. The small intestines were glued together, and any attempt to separate a portion of them was unsuccessful, as the intestine gave way with the force required to do so. The liver, stomach, and pancreas were healthy. The spleen contained a small nodule of the growth.

The pelves of the kidneys and the ureters resembled intestine

distended with gas, being enormously dilated, and an accidental puncture with the point of the scalpel gave exit to some decomposed urine, which squirted out with great force. On tracing down the tortuous and dilated ureters towards the bladder, they were found surrounded by, and involved in, masses composed of degenerated glands. The medullary portion of each kidney was occupied by pouches formed by the dilated calyces, with thin septa between them, and the thickness of the cortical part was much reduced. A spherical mass (exactly 12 mm. in diameter), forming a slight projection on the surface of the organ, about the consistence of cheese, was found in the left kidney.

Running down from the crura of the diaphragm and resting on the bodies of the lumbar vertebræ, to which it was firmly adherent, was an exceedingly hard, slightly lobulated, *cylindrical* mass. The scalpel met with considerable resistance when pushed into it, and when cut it "creaked;" it was also grayish-white in colour and glistening, and numerous yellow spherical masses were abundantly scattered through it. Imbedded in this mass were the descending aorta and vena cava inferior. The mass could not have been less than 4 inches in diameter from before backwards. The pelvis contained a considerable number of degenerated glands. The uterus and rectum were healthy.

Microscopical examination.—The fresh specimens yielded an abundant juice, which was composed of oval, tailed and angular, nucleated cells, measuring from $\frac{1}{32}$ to $\frac{1}{16}$ of an inch in diameter, granule cells—Gluge's corpuscles, and granular cells. Sections of portions of the growth (removed for subsequent examination and hardened in chromic acid) having been stained with carmine and mounted, some in glycerine jelly, some in balsam, presented the following characters:—

1. The tumour of the navel. An abundant alveolar stroma, remarkable for the great number of elastic fibres scattered through it. Alveoli, measuring on an average $\frac{1}{16}$ in their long and $\frac{1}{32}$ of an inch in their short diameter, and containing the cells mentioned above.

2. The omental mass was identical with (1), in most points, stroma more developed in proportion to number and size of alveoli.

3. The retro-peritoneal growth. Here the stroma was exceedingly great (comparatively). The alveoli were much longer and narrower than elsewhere, on an average $\frac{1}{8}$ of an inch long, $\frac{1}{32}$ broad, and were much less abundant in a given space. Nuclei

were visible in the stroma. The yellow masses were mainly composed of the above-mentioned cells, granule cells, and granular cells, free oil globules, &c.

The general and microscopic characters of the umbilical, peritoneal, and retro-peritoneal tumours, were those of scirrhus.

Although the course of the disease was different from that of "Lobstein's retro-peritoneal cancer," as described by Walshe,^a who says;—"The mass spreads upwards, extends to the stomach, passes under the liver, penetrates between laminæ of transverse mesocolon, twists round duodenum and pancreas, and, pushing forward the stomach (with the small curvature of which it contracts adhesions), forms a tumour in the epigastrium." I think this difference of result is explicable, when we take into consideration the mode of death. As the ureters became compressed by the cancerous masses, at first a partial, and finally a complete arrest of the flow of urine through them took place, leading to the condition of hydronephrosis and at length to uræmia, the immediate cause of death. Had this not taken place the patient would probably have lived much longer, the disease might have run the above course, and death from exhaustion or some other cause would have resulted.

One cause of death, spoken of by Walshe,^b is that due to interference with the functions of organs. He says:—"The common effect of these tumours is, however, to act mechanically upon various of the abdominal viscera, and interfere thus with the discharge of their functions. This functional obstruction leads to irritation and inflammatory action. The nature of the symptoms will, of course, vary with the organ or structure which may more particularly have felt the compressing influence of the growth."

That the disease, in the present instance, commenced in the retro-peritoneal cellular tissue is beyond doubt, for a careful examination convinced me that the disease in that situation was of much older date than elsewhere.

According to the author quoted above, "retro-peritoneal^c cancers" are a mixture of encephaloid and scirrhus; according to Jones^d and Sieveking they are sarcomata, and Wedl,^e in his woodcut representing the microscopical appearance of a (typical?) case, figures

^a *The Nature and Treatment of Cancer* (ed. 1846), p. 310.

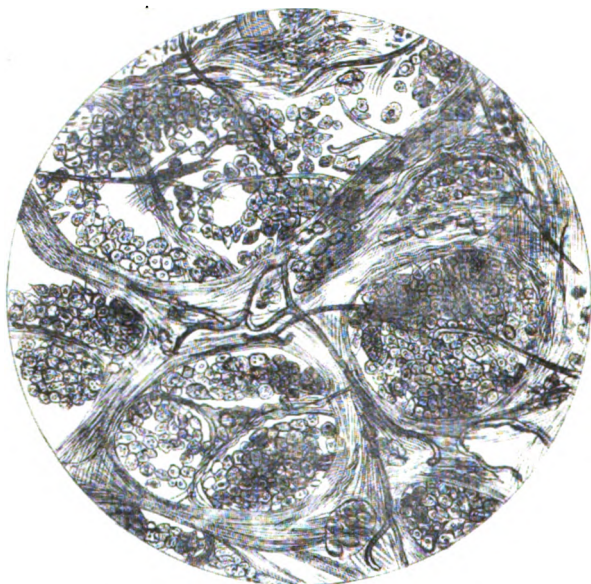
^b *Loc. cit.*

^c *Loc. cit.*

^d *Manual of Pathological Anatomy*. Second edition, pp. 557 and 558.

^e *Rudiments of Pathological Histology*. Trans. by Busk, p. 589.

UMBILICAL CARCINOMA.



× 250

C. A. MACMUNN, *Del.*

bone and cartilage as well as cancer cells. But in the present case (as stated above) the growth was true scirrhus, presenting in different situations minor points of difference due to the influence the normal histological structure of the parts had upon the heterologous formations in them.

With regard to cancer of the navel (which appears to be a pathological curiosity), Dr. Kupfer^a has been able to collect from various sources only 8 cases. Dr. Wulckow, of Pirna,^b has published one; and in the latter case an alveolar carcinoma of the navel co-existed with a myeloid tumour of the stomach.

The drawing illustrating the present paper represents the microscopic appearances of the tumour of the navel under a power of 250 diameters.

ART. II.—*Notes of a Case of Scleroderma.* By ARTHUR WYNNE FOOT, M.D., T.C.D.; Senior Physician, Meath Hospital; Fellow and Censor, King and Queen's College of Physicians, &c.

THE following notes relate to a case of the sufficiently rare disease scleroderma (Kretschmar), or scleriosis (Virchow). In this disease the skin undergoes an idiopathic morbid change, which is chiefly known by a diffuse and remarkable induration, rigidity, and comparative shortening of the part, without any marked disturbance of function in other organs. At the present time more than fifty cases of this disease, first named (though previously described by others) as sclerema adultorum by Thirlial, in the year 1845, have been carefully recorded. Although Kaposi^c states that in the six fatal cases hitherto observed death has never been a direct result of the skin affection, Hilton Fagge^d has reported a case in which the patient could not move her jaws, and really died of starvation. On account of the good state of their general condition and the general inefficiency of any treatment, very few patients affected with scleroderma remain for long under the observation of the same physician. This remark of Kaposi is borne out by the subject of the present notes, as he has since been under observation in another

^a Langenbeck's Archiv. für Klinische Chirurgie. Band XVI. Heft i., p. 234.

^b Berliner Klinische Wochenschrift. No. 39. Sept. 27, 1875. See for a good abstract by Dr. Woodman (of Wulckow's paper) the London Medical Record for Feb. of this year.

^c Hebra. Dis. of Skin. Vol. III., p. 116. Syd. Soc. Trans.

^d Trans. Path. Soc. Lond., 1871. Vol. XXII. p. 309.

hospital in Dublin, where, doubtless, further and valuable researches into the nature of the disease have been instituted.

Among the recorded cases of scleroderma, only one-fourth have occurred in males, and three-fourths in females. The three cases hitherto reported from Dublin, two by M'Donnell^a and one by Barton,^b have been in women.

The subject of the case was admitted to the Meath Hospital 16th September, 1875. He was a gamekeeper, aged thirty-six; height, 5 feet 10 inches; weight, 13 stones 4 lbs.; married, father of five children, all alive; of excellent previous health; he did not drink or smoke, and had never had any venereal affection. His father was still alive, aged eighty-four. The parts of the body which presented the peculiar induration of the skin were the face, right pectoral region, the hands, lower fronts of the thighs, and a portion of the abdomen about the umbilicus. The induration had first appeared, in the previous March, on the left cheek over the malar prominence, then on the chest in June, then on the back of the right hand, and afterwards on that of the left hand. The "tightness" had come in his hands within the past fortnight. Spreading over the face, it had disabled him from frowning, smiling, articulating, or masticating properly. The stiffening of the pectoral region interfered with his dressing and undressing; the condition of his hands prevented him from using his pen, or knife and fork; the induration of the skin of the thighs embarrassed his locomotion.

When admitted he was under the influence of iodide of potassium, which had been administered owing to an impression that he was suffering from lead-poisoning, for which impression there were three explanations—one was that fourteen years ago he had been a painter, and had been at that trade for six years (though he had never apparently suffered from lead); the other was, that he was supposed to have had the habit of some gamekeepers of chewing and swallowing shot, but he told me he had not put a dozen shot in his mouth in his life, and had swallowed none of them; the third was that he seemed to be under the conviction—whether an hallucination or otherwise—that an attempt had been made to poison him with acetate of lead administered in milk. He did not strike me as presenting any of the features of lead disease; however, entering the hospital with a most imperfect history, very anomalous symptoms, apparent oral and lingual paralysis, and ptialism requiring the

^a Dub. Hosp. Gaz., 1st Feb., 1855, p. 6, and 1st Nov., 1856, p. 296.

^b Dub. Quart. Jour. Med. Sci., Aug., 1869, p. 123.

use of a cloth to save the pillow, he was regarded, for a day at least, as a case of glosso-labial paralysis, until the condition of the pectoral region developed the nature of the affection.

On admission, he himself compared the condition of the skin of his face to that of "paper on a wall;" he was unable to frown; his face had a stereotyped, "company-smiling" expression. His forehead, which used to be wrinkled, was perfectly smooth, and he was unable to contract the frontal portion of the occipito-frontalis muscle at all, though formerly he had had such command of this muscle as to be able to move his hat by its action. The contraction of the skin of his head had made a hat which used to fit him well now to be too large for him. He was unable to whistle; when he prepared his mouth to do so an open space remained between his lips from an inability to make them meet, although his efforts to do so were strong enough to empty the capillaries of the lips, causing a halo of pallor round the mouth as if he were going to faint. His nostrils were widely stretched; the retraction of his lips very much exposed all his front teeth, which used not to be visible; he had great difficulty in spitting, felt his lips thick, stiff, and swollen, and was unable to close his mouth. The stiffness was more felt at the left side of the face; the induration in the cheek and some stiffness of the tongue interfered with mastication; the food used to collect inside his left cheek, and required the use of his finger to dislodge it; he found it difficult to "turn the food" in his mouth from a "tightness" of the tongue and cheeks, especially of the left cheek, and the food sometimes dropped from his mouth, owing to the unclosed condition of his lips. The left naso-labial fold was much more smoothed away than the right one. He said he could not protrude the tongue as far as he used or ought to; that it was "caught;" that his under-jaw was retracted, so that his upper teeth overhung, which they used not to do, and that in the morning, when he tried to push forward the lower jaw to its place, he felt a pain in the right ear, referring it to the situation of the temporo-maxillary articulation. On 19th September, when attempting to estimate his vital capacity with Casella's spirometer, I found he could not close his lips on the glass mouth-piece, and that when he proceeded to blow through the tube the air escaped at the angles of his mouth. He said that trying to blow through the mouth-piece "widened the mouth." The induration of the left cheek had first appeared in the skin over the malar bone; he used to have a

trickling feel from the outer angle of the left eye downwards, and often put up his hand to wipe away an imaginary tear. He had a general feeling of tightness and contraction of the skin over the face and head, and about the mouth and tongue. Since his face became thus affected he has constantly felt the effect of cold air upon it, and the face frequently feels to him to be colder than it used to be. The open condition of his mouth made it dry, and when he talked much he had to stop to moisten his lips with his tongue.

The skin over the right pectoral region, from the clavicle downwards to the fourth rib, was smooth, brawny, tight, and could not be pinched up; it was hard, stiff, drawn, and felt thickened like pigs' skin. He said that it was his wife who first drew his attention to the induration of the skin on his chest, owing to the altered sensation it conveyed to her hand. On close examination, especially with a lens, the affected pectoral skin was seen to present short, white, linear, wavy elevations, with intervening depressions of a warmer colour. The lines of the elevations were parallel to the clavicle; the general tint of the skin was not white, but a pale lilac, slightly cyanotic hue; continued pressure over the infra-clavicular region produced slight pitting. An exhausted cupping-glass applied over this portion of the skin did not raise up nearly so high a mound of integument as over the opposite side of the chest; it gave great pain, produced thick plaits of flesh, like the folds of parchment, and caused great whiteness about the margin of the glass as compared with a similar experiment on the opposite side. When he tried to put his right hand behind his back he felt caught in the humerus, at the insertion of the pectoralis major; one of the first symptoms he had observed was a pain in the right arm about the insertion of that muscle, especially at night, which he used to relieve by holding the arm out at right angles to the axillary line of the trunk, so as to put this pectoral muscle on the stretch. Owing to the stiffness of the shoulders he was unable to undress himself; there was stiffness about the left pectoral muscle, but not so marked as on the right side; he could not make his hands meet behind his back. His hands were hard, stiff, and swollen; he could neither fully close nor fully open them; full closure was prevented by the œdematous and rigid condition of the dorsal aspect of the hand and fingers; the obstacle to free extension he referred to the palmar surface of the metacarpo-phalangeal articulations; the hands had been twice as much swollen as at the

time of admission, but the skin over them had only recently been getting tight. He could not close the hands sufficiently to hold his knife and fork until, by wrapping pocket-handkerchiefs round them, he had made them thicker objects to grasp; at home he was accustomed to have his meat cut for him and so used a fork alone. It was just possible to move the tight skin on the backs of the hands, but on the fingers it was as useless to try to do so as to pinch up a crease on a leaden pipe. The hands were very liable to be cold, and very sensitive to cold; although a hardy man and accustomed to exposure, he has had since Christmas to wear gloves to try to keep any heat in them during the day, but soon after going to bed both the hands and feet got a burning, dry heat in them, which ended in perspiration towards morning. The hands had a pinkish slate colour, which deepened into a shade of indigo when they were kept in a dependent position. The palmar surfaces at times looked exactly as if they had been rubbed with black lead, polished, shiny, greyish-black, with a peculiar plumbaginous reflection from them. The effect of position upon the circulation in the hands was shown by their becoming "black" when for heat he kept them in his breeches pockets, and pale when he kept them in his breast. The palms were tightened as well as the backs, and had become hard; he used to have soft hands as he never did any hard work. The hands were generally bedewed with perspiration or glistening with minute droplets of sweat. Before this complaint his hands, which are now so constantly cold, used to be always warm, even in snow or frost. The temperature of the axilla or mouth, whenever it was observed, was found normal; a thermometer kept held for a long time between the thumb and first two fingers, registered on one occasion 83° F., and never reached 90° F. He was very sensitive to changes of weather; could tell when rain was coming, and in damp or chilly weather he went to bed for the sake of warmth. On his admission he could not undress himself, meet his hands behind his back, or hold any small thing in his hands, from inability to close them sufficiently. This arose from the fact that skin affected with scleroderma, though of the same length as before, becomes, owing to the loss of its elasticity, relatively too short for the parts beneath. In a case of scleroderma observed by Dr. Knaggs,* it was found impossible to straighten the corpse without free division of the skin and cellular tissue around the flexed joints. The whole body became rigid gradually, and no position pleased the patient

* Dr. Tilbury Fox. *Trans. Path. Soc. Lond.* 1878. Vol. XXIV., p. 254.

but sitting on the edge of his bed, in which position he died. The only indication of induration of the skin in the lower extremities was across the lower part of the fronts of the thighs. This stiffness above his knees prevented him from walking far, and was greater when he lay in bed than when he was moving about. It interfered more with extension than flexion; he was obliged to go down stairs slowly, one step at a time, until the relaxation of the skin from the treatment adopted allowed him to do so briskly in the ordinary way. While he was in hospital he observed to me that the skin on the abdomen was getting into the condition of that over the pectoral muscles. On examination it was found that the skin was hardened for the extent of a small saucer about the umbilicus, and could not be moved or lifted up with the hand as it used to be, and as it could still be over other parts of the belly; the umbilicus was unnaturally tucked in, and a tight fold arched across its upper margin like an eyebrow. After the inunction for ten days of an ointment of iod. potass. ʒij., ung. cetac. ʒj., the indurated and rigid skin returned to its natural softness and pliancy. Although he enjoyed moderately good general health, he had lost 17 lbs. weight since the disease appeared. His temperature and pulse were normal, and digestion fair; the diseased portions of skin showed normal sensibility. He has remarked an increased growth of hair on the affected parts, and the hair on his face has acquired a darker shade; his fingernails also grow much faster than they used to do. For three months before admission he had suffered from "*anxietas tibiarum*." These "*fidgets*" kept him from getting any rest at night; he had to change his position every ten minutes; he could not keep his legs quiet; a restlessness would come on them from the knees downwards, originating in an uncomfortable sensation in the hams. This sensation, though worse at night, was not absent during the day; he could not remain quiet in one position for any length of time; would walk about, sit down, lie on his bed—on the head of it at one time, the foot another—and so on over and over again. His voice had become treble and shrill as if the sclerosis had attacked the larynx, although there was no visible affection of the mucous membranes, such as previous observers have recorded. The dysphonia was not due, as in Barton's case, to induration of the integuments of the neck.

At one time he had had a difficulty in swallowing his superabundant saliva, though not his food or drink, and he referred this difficulty to the laryngeal region.

While he was under observation, the suddenness with which the swelling of the affected parts appeared and disappeared was very remarkable, and often attracted the attention of the patient. This was especially the case with the patch of the abdominal integument immediately below the umbilicus, which became affected while he was in hospital, but the remark also applies to the skin of the pectoral region and of the hands and feet. This alternation of rigid induration with comparative pliancy indicated the earlier and more hopeful state of the disease. Rasmussen* considers that we may properly divide the disease into two stages,—by no means, however, accurately defined—of which the first is characterised by infiltration (lymphatic œdema, Virchow) in the skin and the subcutaneous connective tissue, with the formation of lymphoid cells in the surroundings of the vessels; the second, by the proper sclerosis from the connective tissue developed from these cells.

Upon his admission he was ordered for a chronic constipation—Res. podophyl. gr. ij., ext. bellad. gr. vi., sod. exsic. gr. xxxvi., ext. gent. q. s. div. in pil. xij.—one night and morning; and for scanty, acid urine, free from albumen, but loaded with urates—Cit. lith. gr. lxxx., fer. et am. cit. gr. lxxx., pot. cit. ʒij., aq. ad. ʒviiij., two tablespoonfuls three times a day, largely diluted. The diuretic mixture was subsequently changed to iod. pot. ʒij. suc. scopar. ʒj., carb. pot. gr. x., aq. ad. ʒviiij., two tablespoonfuls three times a day. Faradisation of the hands made them warmer and lessened their congestion; their colour became more natural, and pressure left less durable white prints on them. Inunction of Gurjun oil mixed with four parts of cod-liver oil was used. He found plain cod-liver oil make the skin more supple than when mixed with Gurjun oil, as the mixed oils dried up too quickly. The Gurjun oil or balsam is an oleoresin obtained by incisions of the bark of *Dipterocarpus lœvis*, and has been used extensively, both internally and externally, by Dr. Dougall in the Haddo Leprous Hospital, Andaman Islands. He also took cod-liver oil internally, and had frequently warm baths. He was not confined to bed, and enjoyed the full diet of the hospital.

The following is a summary of the points in which he observed improvement while under treatment:—The “anxietas tibiarum” disappeared. Relaxation of the skin of the face allowed the jaws to be opened wider and with less difficulty, and the pain in chewing

* Edin. Med. Jour. Sept. and Oct., 1867. Translated from the “Hospitals-Tidende” by William D. Moore, M.D.

referred to the temporo-maxillary articulation disappeared. After diligent inunction of cod-liver oil into the skin of the face he was able to pinch up a fold of the integument. He became able to wrinkle his forehead much better, and creases reappeared when he laughed about the corners of the eyes. He, by slow degrees, became able to whistle, but not strongly; the œdema of the hands notably subsided. He became able to take off his clothes, which he could not do when admitted, but was not able to put them on; he could almost completely shut up the left hand, and some wrinkles on the back, about the knuckles, began to appear, and also over the ball of the thumb. Dependent position of the hands ceased to produce the slate colour in them it formerly did. He became able to write better—so much so as to address an envelope legibly; heretofore he had only ventured to write the contents of a letter and used to get another person to address it for him. He became able to spit, whereas before he had only slobbered his chin when he tried to do so.

He was under observation from 16th September, 1875, to 8th November, 1875. At the latter date, although in many points his condition had been ameliorated and had got worse in none, he seemed vividly impressed with a sense of the incurable nature of his complaint, and went home. Since this paper was written he has again come into my wards.

ART. III.—*Cases of Typhus Fever of Short Duration, ending in Recovery.** By JOHN WILLIAM MOORE, M.D., M.Ch., Dubl.; Fellow and Censor, K.Q.C.P.; Physician to the Meath Hospital; Assistant Physician to Cork-street (Fever) Hospital.

To make an accurate diagnosis in every case of continued fever, no matter of how mild a type, is surely of the first importance in the interests of both Preventive and Clinical Medicine. Whenever we fail to classify the disease under one of the headings "Typhus," "Typhoid," or "Simple Continued Fever," the possibility of checking its further spread—should it be typhus or enteric—is lessened, and the principles of diagnosis of the essential fevers are obscured. These considerations lead me to record the following examples of typhus, which ran a short course, and ended in rapid convalescence.

* Read before the Dublin Biological Club, Tuesday, June 13, 1876.

Although an excessively high mortality has prevailed in Dublin and its suburbs during the past winter, we do not find that typhus fever has been either epidemic or very fatal. In the last quarter of 1875 this disease caused 13 deaths in the Dublin Registration District, and the same number of deaths from it were registered in the first quarter of the present year. Thus, in six months only 26 fatal cases were registered in a population of over 300,000—the total number of *registered* deaths having been 4,866. The death-rate from all causes was 28·0 per 1,000 of the population annually in the fourth quarter of 1875, and 34·4 in the first quarter of 1876.

I have good reason to believe that not only have the fatal cases of typhus been comparatively few of late, but that in many of the favourable cases the fever ran an unusually short course, so as sometimes to simulate simple continued fever.

In the Meath Hospital nine patients suffering from typhus were treated in the six months ending March 31, 1876. Of these, all recovered save one—the night-nurse of the fever wards, a woman sixty-five years of age. She, unfortunately, fought against her illness for several days, and did not come regularly under treatment until the tenth day of the fever. The heart failed, and she died on the fourteenth day. The average duration of the pyrexia in the nine cases was 13·2 days. One patient, who contracted the disease while under treatment in the hospital for *scarlatina faucium*, was not free from fever until the 21st day; another case, with marked cerebral symptoms, lasted 19 days; a third, uncomplicated, 17 days; a fourth, complicated with weakening of the heart, 12 days. Two other patients were apyrexial in 10 days, another in 9 days, and one in 8 days.

The last four cases are sufficiently uncommon to warrant me in placing them on record, and, accordingly, I append the clinical notes in each instance—

CASE I.—Mary D., aged twenty-seven, a dairy-maid, residing at Harold's Cross, took ill on Christmas Eve, 1875. She said herself that she caught cold about a fortnight before, when she got a wetting. A violent shivering occurred on Christmas Eve—she was "all shaking," while severe headache had distressed her for three days previously. Her appetite failed on December 24th, when she had sickness of stomach and vomiting of food. A dry cough set in, and ultimately there was great purging.

She had been seeing people ill of "gastric" fever three doors from where she lives about a fortnight before she took sick, and she used to leave her milk-cans in the sick-room. On January 1, 1876, her mistress came to see her, and stated that the woman caught the fever from her husband, whom she attended, and who died of typhus after the 8th day.

On Wednesday, December 29th—the 6th day—she was admitted to the Meath Hospital, under the care of my clinical clerk, Mr. J. Christal. Her temperature was then $103\cdot4^{\circ}$; pulse, 119; respirations, 27. The catamenia were flowing, the discharge being pale in colour. Next morning her skin was very dusky. Maculæ were abundant on the back, and to a less extent on the chest. The lips were covered with sordes. Her tongue was brown at the edges red and dry in the centre and at the tip. The bowels had acted four times in the preceding 24 hours.

7th day—Thursday, December 30th.—Tongue, dry, brown, and fissured. There was an intense fever odour. Skin still dusky, and maculæ well marked. Pulse, 116; respirations, 40; temperature, $103\cdot6^{\circ}$. Defervescence commenced on this day, so that by evening the pulse had fallen to 99, the respirations to 35, and temperature to $103\cdot3^{\circ}$. This change for the better continued, the rash faded, the sordes disappeared, and on the morning of January 3rd (11th day) she was completely free from fever; her pulse, 70; respirations, 20; and temperature, $97\cdot8^{\circ}$. The evening observations on this day were:—Pulse, 60; respirations, 18; and temperature, $98\cdot6^{\circ}$. The pulse was slow and intermitted about twice a minute. The weak state of the heart required tonics and some stimulants.

The similarity between this case and one recorded by Dr. Murchison is so striking that I quote the latter for the sake of comparison:—"Case XVI.—*Typhus, with Convalescence commencing on 8th day.*—Mary G., aged forty-seven, admitted into the London Fever Hospital July 28th, 1857. On 24th she had been quite well, but on 25th she had been seized with shivering, headache, general pains, and nausea. July 29th (5th day).—Pulse, 84, and feeble; much headache; expression heavy, and is a little confused, but answers correctly. Skin warm and dry, with a well-marked typhus rash on the chest and abdomen. Tongue dry and brown. Some cough, with frothy expectoration, and sibilant and sonorous râles over chest. Continued much in same state until morning of August 1st (8th day),

when she felt and looked much better; pulse 72, eruption almost gone, tongue clean and moist, appetite good, and cough much relieved. From this date she improved daily.”*

CASE II.—Michael W., aged twelve, school-boy, took part in a school-feast on Wednesday, January 19th, 1876. At 1 p.m. next day he felt ill and vomited. From that time he complained of headache and weakness. There was constipation, for which he took medicine. He was admitted to the Meath Hospital, and was placed by me under the charge of Mr. Blacker Powell, Practising Pupil, on the evening of the 5th day (January 24th). Pulse, 114; respirations, 20; temperature, 103·3°. Next morning his face was flushed, and of a dusky tint. The skin was universally mottled, and an eruption of maculæ was observed on the abdomen and in the lumbar regions. The tongue was furred, and he complained much of headache. Pulse, 116; respirations, 19; temperature, 100·8°.

January 25th (6th day).—Pulse, 116; respirations, 19; temperature, 100·8°. The teeth were now covered with sordes; the skin was mottled as on the preceding day.

January 27th (8th day).—Pulse, 100; respirations, 28; temperature, 99·2°. Maculæ fading rapidly.

January 28th (9th day).—Pulse, 98; respirations, 24; temperature, 98·4°. Maculæ all gone. The following day the morning and evening temperatures were subnormal, as will be seen by a reference to Chart II.

CASE III.—James F., aged sixteen, a messenger, residing at 23, Bishop-street, Dublin, sickened at 9½ a.m. on Sunday, February 13th, 1876. He shivered once or twice, and felt pain in his head. At 2 p.m. a cough set in. There was neither nausea nor vomiting. He lost his appetite. He worked on during the next two days, but on Wednesday had to stay in bed. He attributes his illness to wet feet, caused by wearing bad boots during the wet weather of the week before he took sick. On Friday, February 18th (6th day) he came into hospital, having previously taken a dose of salts and senna for confined bowels. His tongue was furred, but clean at the tip; his eyes were clear. There was diarrhœa—apparently from the medicine he had taken, as it passed off in a few hours. There was a mottling of the skin over the abdomen and back, and what

* The Continued Fevers of Great Britain. Second edition. 1873. Page 188.

appeared to be some maculæ of a pink colour, and often slightly elevated, were observed on the trunk. No fresh crops came out, and in a day or two the skin cleared completely. The temperature reached its highest point (104.4°), as it often does in typhus, on the evening of the 7th day, within sixty hours from which time defervescence was completed (see Chart III.)

CASE IV.—Alfred H., aged forty-six, a cabinet-maker, of temperate habits, was in good health until the evening of Wednesday, February 16th, 1876, when he was attacked by shivering, which continued more or less for several days. Next day he felt cold, fatigued, and much prostrated. There was a "terrible" pain in his head, especially across his brows. He remained sleepless for four nights. Appetite was lost, without nausea or vomiting. Bowels rather confined. Urine scanty and high-coloured. He attributed his illness to working in draughts. When admitted to hospital, on the evening of the 7th day, his tongue was furred, dry, and brown in the centre. He was very thirsty.

February 24th (8th day), 9 a.m.—Pulse, 102; respirations, 24; temperature, 102.8° . The whole body was found to be covered with a bright typhus rash. His eyes were dusky and injected. The temples were leeches, to relieve headache—a line of treatment further indicated by violent throbbing in the temporal arteries.

February 25th (9th day), 9.30 a.m.—Pulse, 98; respirations, 26; temperature, 102.4° . The headache was relieved by the leeching, but he had not slept. The tongue was now covered with a white creamy fur, and was moist. The injection of the eyes was less, while the throbbing in the temporals was not nearly so violent. Heart's action fairly strong. Rash fading quickly. Urine more abundant, but still high-coloured. Bowels confined. In the afternoon copious perspiration and a free action of the bowels ushered in defervescence, which was completed by 9 a.m. of the 11th day. The rapidity of the fall in temperature is graphically shown in Chart IV.

A careful study of the foregoing notes must, I think, convince us that the disease was in each case typhus fever. Mary D. was exposed to the contagion of this disease, and the rash was well marked. The sudden onset of the symptoms, the rash, and the rapid defervescence in the cases of Michael W. and James F., distinguished the attack from an aborted enteric fever. Of the diagnosis in Alfred H.'s case, there could be no room for doubt.

Although it is uncommon for typhus to run so short a course to convalescence as eight, nine, or even ten days, yet, as we know, it sometimes does terminate at these early periods. "In my experience," observes Dr. Charles Murchison, one of the greatest living authorities on the subject,^a "mild cases of typhus (with eruption) have sometimes terminated on the tenth, or even as early as the eighth day. It is probable, moreover, that many cases of so-called Febricula, where the fever lasts only two or three days, and is not attended by rash, occasionally result from a small dose of the typhus poison; at all events, cases answering to this description sometimes occur in the same family, and at the same time, as true typhus."

Again, speaking of the varieties of typhus, the same author^b says:—"Cases are met with, particularly at such times and places as the disease is not epidemic, in which the fever is of short duration, and runs a mild course, without severe symptoms of any sort. The fever was of this mild character in 235 out of 1,302 cases observed by Barrallier. Were it not for the eruption, these cases would be regarded as examples of simple fever, or febricula. Mention is made of this form by Hildenbrand, under the appellation of *Typhus levissimus*."

Dr. Murchison^c has carefully analysed 500 uncomplicated cases of typhus fever, and finds the average duration of them to have been 13·43 days. Only 1 case out of 500, or 0·2 per cent., terminated in 7 days; 2 cases lasted 8 days; 8 cases, 9 days; 27 cases, 10 days; 31 cases, 11 days; 65 cases, 12 days; 123 cases, 13 days; 119 cases, 14 days; 77 cases, 15 days; 29 cases, 16 days; 11 cases, 17 days; 4 cases, 18 days; and 3 cases, 19 days. The average duration of these 500 cases very closely agrees with that of the 9 mentioned in this paper—viz., 13·2 days.

Wunderlich,^d speaking of the temperature in exanthematic typhus, says—"Defervescence may immediately follow the first inconsiderable diminution of temperature, which occurs in the middle of the second week, without any further rise of temperature intervening. In these slight cases the diagnosis generally remains doubtful during the fastigium, unless the etiology confirms it."

The temperature ranges, represented in the accompanying Charts, fully agree with and illustrate this description.

^a A Treatise on the Continued Fevers of Great Britain. Second edition. Page 187.

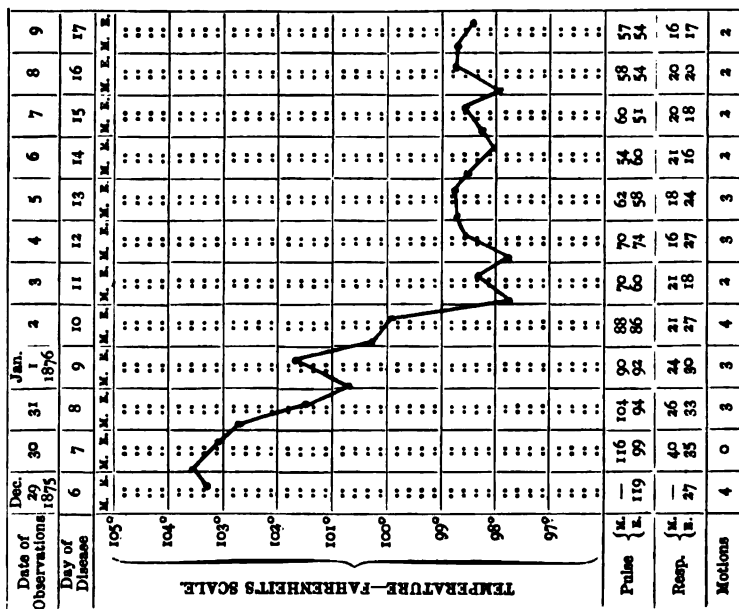
^b Loc. cit. Page 227.

^c Loc. cit. Page 185.

^d Medical Thermometry. New Syd. Soc. 1861. Page 323.

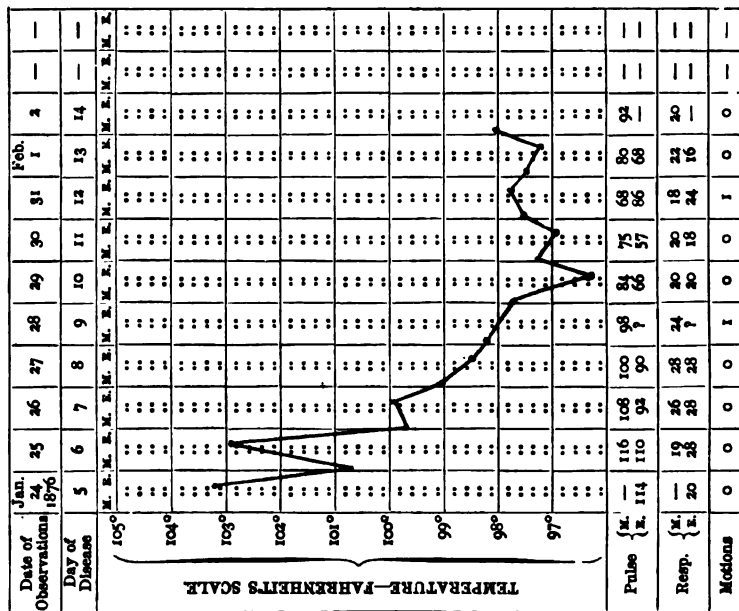
CLINICAL CHART OF TEMPERATURE, &c.—I.

M. D. ; Age, 27 ; Disease, *Typhus Fever* ; Result, *Recovery*.



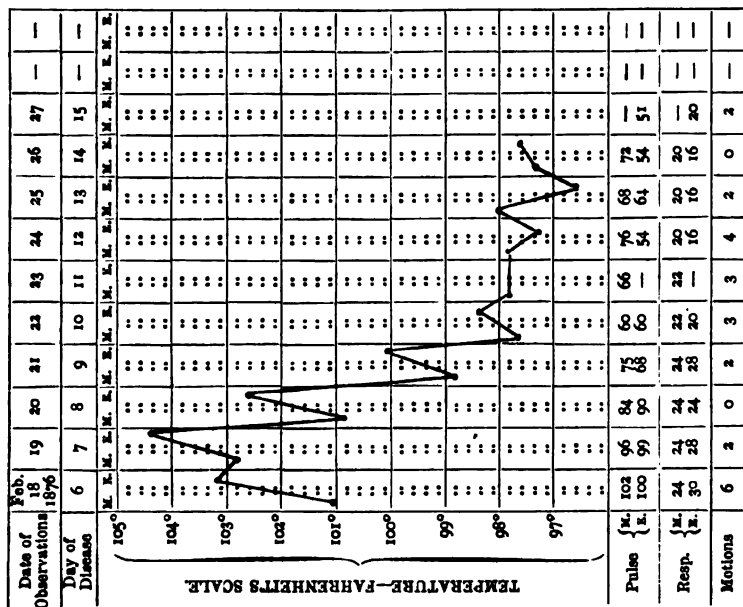
CLINICAL CHART OF TEMPERATURE, &c.—II.

M. W. ; Age, 12 ; Disease, *Typhus Fever* ; Result, *Recovery*.



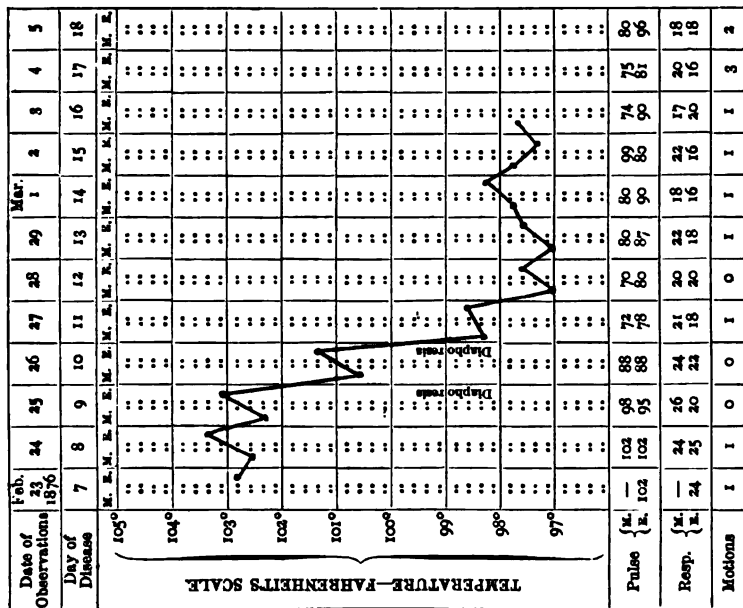
CLINICAL CHART OF TEMPERATURE, &c.—III.

J. F.; Age, 16; Disease, *Typhus Fever*; Result, *Recovery*.



CLINICAL CHART OF TEMPERATURE, &c.—IV.

A. H.; Age, 46; Disease, *Typhus Fever*; Result, *Recovery*.



PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

HEREDITY AND CONSANGUINITY.

1. *Heredity: a Psychological Study of its Phenomena, Laws, Causes, and Consequences.* Anonymously translated from the French of Professor TH. RIBOT. London: Henry S. King and Co. 1875.
2. *On the Marriage of Near Kin.* By ALFRED H. HUTH. London: J. & A. Churchill. 1875.

THE supreme importance of the problems presented by the influence of heredity upon the human race is every day becoming more deeply felt, not only by sociologists but by practical physicians, especially those who have devoted themselves to the study of preventive medicine. The two works now before us—the one dealing with the general subject of heredity, the other with an interesting branch of it not yet investigated with the care and diligence it deserves, are therefore well worth the attention of our readers.

The anonymous translator of Professor Ribot's book has apparently done his work well, and the volume now given to the English public by Messrs. King and Co. deserves a place in the library of all who are interested in the subject of which it treats. The work falls into four sections, entitled, respectively, the Facts, the Laws, the Causes, and the Consequences; and the French talent for systematisation is displayed in its arrangement throughout. The author defines heredity as "that biological law by which all beings endowed with life tend to reproduce themselves in their descendants: it is for the species what personal identity is for the individual. By it a groundwork remains unchanged amid incessant variation; by it Nature ever copies and imitates herself. Ideally considered, heredity would simply be the reproduction of like by like. But this conception is purely theoretical, for the phenomena of life do not lend themselves to such mathematical precision; the conditions of their occurrence grow more and more complex in proportion as we ascend from the vegetable world to

the higher animals, and thence to man." Now, man may be regarded either in his physical or mental aspect, and the question asked:—"Are both of these forms of life subject to the law of heredity? Are they subject to it wholly, or only in part? And, in the latter case, to what extent are they so subject?" The physiological side of the question has already been diligently studied, but not the psychological side; and this deficiency the author proposes here to supply.

First, for the facts. The author, in the first part of his work, endeavours to show that Instincts (natural and acquired), Sensorial Qualities, Memory, Imagination and the *Æsthetic* Faculty, Intellect, Sentiment and Passion, Will, National Character, and Morbid Mental Conditions, are all subject to the law of heredity.

In the chapter on Heredity of the Sentiments and Passions, Professor Ribot cites a number of interesting facts which he has collected to illustrate his position. The transmission of individual character from parents to children is common in animals as well as in man. Girou de Buzareingues tells of a dog taken from the teat and bred apart from either parent, which was "incorrigibly obstinate and gun-shy in circumstances where other dogs were eagerly excited," the father having had the same peculiarity. The transmission of race-characters is also a matter of observation. Lord Orford crossed a breed of grey-hounds, which were wanting in courage, with a bulldog, and after six or seven generations, while the physical characters of the bulldog were eliminated, his courage and perseverance remained.

The hereditary nature of the various forms of alcoholism is too well recognised to need illustration here; and other vices of appetite would appear to follow the same law. The Bourbons have the reputation of being great gourmands, a propensity inherited from Louis XIV.; and even cannibalism is, according to various authors, hereditary. So also is earth-eating. Lust in all its forms is similarly hereditary. Prosper Lucas tells us of "a very handsome man, of an excellent constitution, but possessed of an unbridled passion for wine and women. He had a son, who, while yet but a lad, carried both these vices to excess. He carried off a mistress from his father, who never forgave the offence to the day of his death. This was the outset of his career; he was afterwards ruined, and reduced to the utmost penury by harlots. His son died young, but incorrigible, and from the same vices as his father and grandfather." The same author mentions the case of a man-cook, very libidinous,

and addicted to Sodomy; "one of his natural sons, living apart from him, does not even know his father, and, though not yet quite nineteen, has, from childhood, given all the signs of extreme lust; and, strange to say, he, like his father, is equally addicted to either sex."

Gambling, avarice, thieving, and other similar vices are all hereditary.

In the chapter on "Morbid Psychological Heredity," the author gives a number of those cases so familiar to students of the phenomena of insanity, of morbid impulses to suicide, homicide, &c., occurring as family characteristics. There is nothing very new in all this, and we, therefore, proceed to the second section of the work—The Laws.

Some of the earlier writers, while granting the existence of physiological have denied that of psychological heredity. Virey holds that "we must distinguish between the moral qualities which appertain to the body and the moral qualities which belong to the soul;" the former being transmissible, the latter not. "In man, heredity controls everything relating to vital force, but does not control the indigenous or exotic qualities of the inner sense." This distinction is no longer tenable, the body and soul being no longer regarded as separate and independent entities. Professor Ribot, however, while repudiating the distinction between moral qualities which appertain to the soul and those which appertain to the body, admits that there may be a truth at the bottom of this distinction:—

"Suppose," he says, "it has been distinctively proved that all modes of psychical activity—the senses, memory, imagination, reasoning, sentiments, instincts, passions, normal or morbid dispositions—are transmissible: is the aggregate of these modes the whole sentient and conscious being; or is there, besides these, a *nescio quid* called the *I*—the person, the genius, the character—that inner power which in its own way elaborates all these materials of sentiment and cognition, and impresses on them its own peculiar stamp? Must it be considered that the various modes of psychical activity, by varied inter-relations, constitute in themselves the personality; or is there something else? Is *I* a result or a cause? If we consider that like impressions are felt and transformed in widely different ways by different individuals, and that between genius and idiocy are found all possible shades of mental activity, one may be inclined to regard as reasonable the hypothesis of a principle of individuation which explains these differences. And then would arise

the question: Is the *I*, the personality, the constituent element of the individual, transmissible by heredity, as are the various modes of mental activity?"

These questions occupying, as they do, the border-land between physiology and metaphysics, and involving the subject of the relations between necessity and free-will, are the most important which can be asked in connexion with the subject of heredity; and the author postpones their discussion until the end of the book, and proceeds with a series of preliminary investigations.

Buckle has thrown doubts upon the existence of heredity in any form, apparently regarding the so-called instances of physiological heredity as merely cases of fortuitous succession. But Maupertius has shown that on such a supposition the persistence of a physiological peculiarity (such as sexdigitism) through three generations is as 8000 millions to 1—"figures so large that the certainty of things best demonstrated in physics does not approximate to these probabilities."

The first question which Professor Ribot puts respecting psychical heredity:—"Are cases of psychical heredity fortuitous, or are they the result of a law?"—he thus sub-divides and answers:—

1. "Are specific characteristics, physical and moral, transmitted by heredity? They are always transmitted, both in the animal and in man.

2. "Are those less general characteristics, which constitute races and societies, hereditary? They are also hereditary; a spaniel was never produced by a bull-dog, nor a white man by a negro. And this holds good also of psychical qualities; a given animal possesses not only the general instincts of the species, but also the peculiar instincts of the race. The negro inherits not only the psychological faculties which are common to all men, but also a certain peculiar form of mental constitution—namely, an excess of sensibility and imagination, sensual tendencies, incapacity for abstract thought, &c.

3. "Are purely individual characteristics hereditary? Facts have demonstrated that they are often so, both in physics and morals.

"In conclusion, heredity always governs those broadly general characteristics which determine the species, always those less general characteristics which constitute the variety, and often individual characteristics. Hence, the evident conclusion that heredity is the law, non-heredity the exception."

The grand law of heredity, then, is that "*Like produces like*;" but while it is evident that its influence upon the various forms of life is very great, it is equally evident that there are counteracting forces

likewise at work. "Not to speak of the external causes (chance influence of circumstances), which interfere with the action of heredity, there are interior causes, inherent in heredity itself, which hinder the law from pursuing the simple course from like to like." In the lowest forms of life heredity acts with the utmost simplicity: unisexual creatures reproduce themselves with the least possible amount of variation; but the occurrence of sex at once introduces a factor of variability, the progeny of the two sexes being the resultant of two sets of individual characteristics instead of one. There is, as it were, a struggle between two sexual forces, more or less antagonistic. The absolute law of heredity thus reveals itself under a number of other minor laws, which may be called "Empirical laws of heredity." These laws may be thus generalised:—

"*Direct Heredity*, which consists in the transmission of paternal and maternal qualities to the children. This form of heredity offers two aspects—

"(1.) The child takes after father and mother equally, as regards both physical and moral characters—a case, strictly speaking, of very rare occurrence, for the very ideal of the law would then be realised;

"Or, (2.) The child, while taking after both parents, more especially resembles one of them; and here again we must distinguish between two cases.

"a. The first of these is when heredity takes place in the same sex—from father to son; from mother to daughter.

"b. The other, which occurs more frequently, is where heredity occurs between different sexes—from father to daughter; from mother to son.

"2. *Reversional Heredity*, or *Atavism*, consists in the reproduction in the descendants of the moral or physical qualities of the ancestors. It occurs frequently between grandfather and grandson, grandmother and granddaughter.

"3. *Collateral*, or *Indirect Heredity*, which is of rarer occurrence than the foregoing, subsists, as is indicated by its name, between individuals and their ancestors in the indirect line—uncle, or granduncle, and nephew; aunt, and niece.

"4. Finally, to complete the classification, we must mention the *Heredity of Influence*, very rare from the physiological point of view, and of which probably no single instance is proved in the moral order. It consists in the reproduction in the children by a second marriage of some peculiarity belonging to a former spouse."

These laws, with their exceptions, the author then proceeds to study.

“1. *Direct Heredity*.—What part has each of the sexes in the production of the offspring, and of which does the influence preponderate?”

These questions have been answered in various ways, and some of the answers, no doubt, contain partial truths. Ancient writers on the subject were divided into *spermatists* and *ovoists*, the former proclaiming that the germ came from the male alone, the latter that it was the product of the female alone—both untenable theories. Prosper Lucas theoretically formulated the law of direct heredity as consisting in “absolute equilibrium in the physical and moral nature of the infant, of the integral resemblances of the two parents,” the child being thus the exact mean of the two parents. But, practically, this seldom or never takes place. The amount and nature of the influence of each parent depend upon a great many conditions, most difficult to study, and as yet but little investigated. Disproportion in age, when it does not produce sterility, gives the preponderance to the younger; and the state of health and other transitory conditions at the period of procreation affect the offspring to an appreciable extent. Many observers contribute facts respecting cross-breeding, which require confirmation and collation to bear much scientific fruit. “According to Rursh, marriages between Danes and East Indian women produce children with the physique and the vigour of the European type, while nothing of the kind occurs when the same women marry other Europeans. The intermarriage of Caucasians and Mongolians produces, according to Klaproth, half-breeds in whom the Mongolian type is always predominant, whatever may be the sex of the half-breed. From Levaillant’s observations (“*Voyage en Cafrérie*”) on the half-breed children of Europeans and Hottentots, we gather that in them the moral nature is always determined by the race of the father. ‘Whenever it happens, which is but rarely, that a white woman has intercourse with a Hottentot, the child has always the good-nature and the gentle and kindly inclinations of the father; but the children of white men and Hottentot women, on the other hand, have in themselves the germs of all vices and unruly passions.’”

Burdach holds that when the parents love one another, their offspring are beautiful, while “when parents have a dislike to one another, they beget ugly forms, and their children are less lively and vigorous.” He also believes that there is an invariable connexion between the heredity of physical and moral resemblance. Da Gama Machado lays it down that the parent who transmits his

colour transmits his character. Girou de Buzareingues distinguishes two lives in every individual, whatever the sex—"the external life, on which depends the nervous system of the animal life, and the muscular system, of which motor activity, will, and intelligence are the attributes; and the internal life, which comprises the cellular tissue, the digestive system, the great sympathetic, and the whole nerve-system of the organic life: on this depend internal sensibility and the sentiments." Transmission of external life thus implies transmission of intelligence; transmission of internal that of sentiments. Gall and Spurzheim maintain that analogous character depends on analogy of the cranial conformation.

One fact stands out from these conflicting doctrines, each of which, doubtless, contains some particles of truth, and that is, that the influence of either father or mother usually preponderates. Yet, however great this preponderance may be, it is never absolute; heredity is never unilateral. The influence of one parent may remain latent in the child, but reappear as atavism in its descendants.

Strange cases, Professor Ribot says, sometimes occur when one parent transmits the entire physical, the other parent the entire moral, nature—the instance cited being that of Lislet-Geoffroy, an engineer of Mauritius, the son of a white man and "a very stupid negress," who inherited the physical constitution of his mother, the moral character and intellect of his father. In other cases particular organs are transmitted by either parent. "Thus, the father may transmit to the child the brain, and the mother the stomach; one the heart, the other the liver; one the great intestine, the other the pancreas; one the kidneys, the other the bladder. These facts have been established by animal and human anatomy. They give the organic reason for the intercrossing of instincts, which is often so curious, and of the morbid and passionate predispositions of both parents in the child."

Cross heredity, from father to daughter and from mother to son, is as well established as direct, from father to son, and mother to daughter. The cross heredity of a deformity is very common.

The relative frequency of direct and cross heredity is a disputed point. Insanity, according to Baillarger, usually passes from father to son and from mother to daughter. But probably there is not much difference in the frequency of these two forms of heredity.

2. *Atavism*.—Cases of reversional heredity, or atavism, in which a child, instead of resembling its parents, resembles some remoter ancestor, are not unfrequently met with in the human race, and such reversion is very frequent in plants and animals. It is not uncommon for insanity to skip a generation, and reappear only in the grandchildren of the affected person.

3. *Indirect Heredity*, in which a child resembles some collateral relation, is evidently only a form of atavism, the persons resembling each other being descended from a common stock, of which the characteristics are reproduced in them.

"I am acquainted," says Quatrefages, "with a family, into which married a grandniece of the illustrious Bailli de Suffren Saint-Tropez, the last French commander in the great Indian wars against the English, with Hyder Ali for his ally. This lady had two sons, the younger of whom, judging from a very fine portrait, bore a very striking resemblance to his great granduncle, but was not at all like his father or mother. The celebrated sailor, therefore, and his great great-nephew reproduced, with an interval of four generations between them, the features of a common ancestor.* Plainly atavism acted here in both branches, for in this case there is no direct heredity."

4. *Heredity of Influence*.—

"We admit," says Professor Ribot, "that from the psychological point of view, we are sceptical in regard to this form of heredity, especially as regards man. It consists in the influence of a former alliance on the children born of a subsequent marriage."

Nevertheless, the observations of Burdach, if confirmed by others, would establish the fact with regard to the lower animals, and make it extremely probable that the law holds good for the human race also. He gives the following examples:—

"When a mare is crossed by an ass, and produces a mule, if she be afterwards put to a stallion, the colt she then drops will bear some points of resemblance to an ass.

"An English mare, which in 1815 was once covered by a quagga, gave birth to a mule marked with spots; she never saw the quagga again. In 1817, 1818, and 1823 she was covered

* Unless there were a portrait extant of some "common ancestor," whom both these persons resembled, it is surely somewhat unscientific to assume that such an ancestor actually existed. Each of these persons may, as it were, have brought to a focus a number of hereditary forces never thus concentrated in any other instance.

successively by three Arab stallions, and produced three brown colts, with bands like those of the quagga.

"A sow which had had by a wild boar a litter, in which the brown colour of the sire was predominant, was put, long after his death, to boars of domestic breeds; among the pigs of the second and third litters were several having patches of the colour of the wild boar.

"If a bitch be once put to a dog of another race, every litter of puppies afterwards will include one belonging to that other breed, except the first time she be put only to dogs of her own breed.

"It is the same with the human species," he says; "we sometimes find the children of a second marriage resembling the former husband, who may be long since dead, and showing a closer relation to him, even from the moral point of view, than to their true father."

He gives no instance of this; but Michelet (*"Histoire de France,"* Tome XIII.) has the following passage:—"Madame de Montespan had already had a son by M. de Montespan. The first child she had by the King—the Duc de Maine—resembled only her husband; he had his Gascon disposition, his buffoonery. He might have passed for the grandson of Zamet, the buffoon." This, which Professor Ribot states to be the only case he knows, must be taken for whatever it is worth.

The second part concludes with a consideration of the exceptions to the law of heredity. So striking are these apparent exceptions, that Lucas has adopted the hypothesis of a law of spontaneous variation acting in opposition to that of heredity. Professor Ribot, on the other hand, holds that heredity, under the form of atavism, is sufficient to account for variations, without calling in any new law.

These apparent exceptions are of various kinds. Children of the same parents may be so different one from the other that such coarse methods of observation as are practised in every-day life reveal no sign indicative of common blood. Even twins may be thus unlike. Serres observed this, with a great mental dissimilarity, in the case of Rita and Christina, the female twins of Presburg, who were united by the inferior lumbar vertebræ. "They differed completely in character. One was handsome, gentle, sedate, with sensuous character little marked; the other ugly, ill-conditioned, quarrelsome, and of strong passions. Her outbursts of rage against her sister and their disputes became so frequent,

that in the convent where Cardinal Von Saxe-Zeitz had placed them the inmates were compelled to give them in charge of a watcher, who never left them alone. Notwithstanding these quarrels, they lived to the age of twenty-two."

Hideous-featured persons may give birth to children of surpassing beauty; perfectly-formed persons to deformed creatures; deformed parents to perfect children:—

"A man had by his wife eight children, of whom four were dwarfs. Bébé, the famous dwarf of King Stanislaus, and whose height was thirty-three inches, was born in the Vosges of well-formed, vigorous parents. The celebrated Polish gentleman, Borwslaski, whose height was twenty-eight inches, had a brother and sister dwarfs like himself, and three other brothers, each five feet six inches in stature."

Some idiosyncracies are very remarkable, and look like facts of spontaneity. Zimmerman has collected several examples, "as, for instance, of a man who suffered extreme agonies when his nails were clipped; another when his face was washed with a sponge. For some persons coffee is an emetic, jalap a constipant. Hachn could not eat more than seven or eight strawberries without falling into convulsions, and Tissot could not swallow sugar without vomiting." All such variations, as also hare-lip and other deformities, may become hereditary—heredity thus giving permanence to exceptions to its own action. Edward Lambert, "the man-porcupine," transmitted his tortoise-like skin to his descendants.

Two theories may be proposed to account for such cases of variation. The *first* is that of Dr. Lucas, that generation is governed by two opposing laws—the one of spontaneity, the other of heredity; the *second* is that held by Professor Ribot himself, that the causes of spontaneity are accidental, all cases of spontaneous variation arising from the fortuitous play of circumstances.

Now, what are the circumstances which tend to modify the action of heredity? If heredity acted simply, we should have a single being producing one exactly similar—like producing like. It is evident that this does not take place. What, then, are the disturbing influences? In the first place, the antagonistic heredities of the two sexes—the product of their union may be roughly likened to the amalgamation of two metals; the amalgam possesses something of the characteristics of the parent metals, yet differs materially from both. But besides this important

factor of variation, there are three classes of causes tending to produce differences in the offspring:—1. Causes acting at the moment of conception, such as drunkenness in the parents; 2. Causes acting during intra-uterine existence, such as fright to the mother, which is said to produce monsters; 3. Causes acting after birth, such as diet, climate, circumstances, education. Prof. Ribot further points out that in so delicate an organism as that of an animal, very slight causes may give rise to very important effects. Hen's eggs, if shaken, perforated, or partially coated with varnish, or even set up on end, will produce monsters; and women who conceal their pregnancy, or have to work hard during gestation, are specially apt to give birth to monsters. He does not, however, argue that even monsters so produced may be returns to some primitive type—yet the arrest or modification of development in a human foetus may open up vistas of an atavism reaching back to some pre-human ancestor.

Space will not permit us to go minutely into the third part of the work, in which the author discusses the causes of heredity. The first conclusion at which he arrives is that psychological is dependent upon physiological heredity, the two being, in fact, different phases of the same law:—

“The two heredities,” he says, “being thus reduced to one, we again sought for the cause of heredity, and found only a hypothesis, probable indeed, but which, lying beyond the limits of experience, cannot be verified. The definite result of these researches—and the point is so important that it must be again and again repeated—is that *heredity is identity as far as it is possible*; it is the one being in many. ‘The cause of heredity,’ says Hückel, ‘is the partial identity of the materials which constitute the organism of the parent and child, and the division of this substance at the time of reproduction.’ Heredity, in fact, is to be considered only as a kind of growth, like the spontaneous division of a unicellular plant of the simplest organisation.”

The hypothesis adopted by Professor Ribot would, therefore, seem to be that of Darwin, which is known as *Pangenesis*. On this hypothesis—

“We must consider each living being as a microcosm, made up of a multitude of organisms capable of self-reproduction, of inconceivable minuteness, and as numerous as the stars of heaven.”

Each reproductive unit is, therefore, an epitome of the organism from which it springs, containing an inconceivably minute portion

of each tissue-element of this organism, in the shape of a "gemmule," capable of development under favourable circumstances. The law of elective affinity, by which these gemmules come to be packed so nicely, each in its proper proportion, and which would correspond to this physiological atomic theory, has still to be worked out.

In the fourth part the practical consequences of the law of heredity are treated of, the questions opened up being of the utmost interest.

The idea of human progress is quite of modern origin, and is as yet but gradually losing its vagueness and acquiring a precise signification. The progress of the human race towards any ideal perfection must of necessity be but a particular case of that more extended progress of the universe to greater and greater complexity, which we are becoming more and more distinctly cognisant of under the name of *Evolution*. Evolution of the universe implies that of the human race, but evolution of the race does not necessarily imply its progress towards ideal perfection. If, then, we are anxious for this progress, it behoves us to inquire how far it is compatible with the general laws of evolution; how far it lies within our power to bend these natural laws to the ends we desire to attain; and what methods we should pursue to acquire the necessary power. In this case, as in all others, "knowledge is power," and our first business is to study the laws of human development.

"Heredity and evolution," says Professor Ribot, "are the two necessary factors of every stable modification in the domain of life"—evolution being, for him, "an integration, a transition from simple to complex. The reason of this universal transformation of homogeneous into heterogeneous is this, that every active form produces more than one change, and every cause more than one effect. Thus, a shock will produce motion, sound, heat, and light; a little small-pox virus in the organism will produce very numerous morbid phenomena; an economic reform will lead to many industrial and social consequences. Everywhere, in short, even where the cause is simple, the effects are manifold."

It seems strange that Professor Ribot, having thus defined evolution as "a transition from simple to complex," should, in a few sentences after, tell us that—

"It is possible for a new race to be of simpler structure, and of less developed understanding, than those which it displaces; a slight advantage

is sufficient to insure it the victory over its rivals. The law of evolution accounts equally well for progress and for what is called degradation—that is, a retrograde movement towards an inferior structure, or a lower form of dynamism. It is sufficient if a being so degraded, whether physically or morally, is better adapted to its new conditions of existence than a being more highly endowed."

Now, if Professor Ribot means by "inferior structure" and "lower form of dynamism" a *less complicated* structure, as he apparently does, it is surely wrong to call this "retrograde movement" one of evolution, which he has defined as "transition from simple to complex." Evolution of the entire universe may be compatible with, and may even depend upon, retrogression in some particular instances—just as we see the life of an organism is compatible with the decay of particular parts of that organism. But just as it would be improper to call such decay *life*, if by life we understand development, it is improper to call such "retrograde movement" evolution.

The grand practical question for solution is, then, "How can we wield the laws of heredity for the good of the race?" The improvement of the race is the great object of civilisation. It is the great object of education, taken in its extended sense. But education alone is quite insufficient to uproot vices of constitution, physical and mental, which are hereditary. Too much power has been attributed to it by writers in former times. Leibnitz said:—"Entrust me with education, and in less than a century I will change the face of Europe." Descartes declared that "sound understanding is the most widely diffused thing in all the world, and all differences between mind and mind spring from the fact that we conduct our thoughts over different routes;" Locke, that "out of one hundred men more than ninety are good or bad, useful and harmful to society, owing to the education they have received;" Helvetius, that "all men are born equal and with equal faculties, and education alone produces a difference between them." But these are the exaggerated views of men who were not aware of the potent influence of heredity. It is notorious that most great men have had to struggle against all the tendencies of a bad or congenial education; but their force of character is exceptional.

"We restrict education, as we think," says Professor Ribot, "within its just limits when we say that its power is never absolute, and that it exerts no efficacious action except upon mediocre natures. Suppose the

various human intelligences to be so graduated as to form a great lineal series, rising from idiocy, the bottom of the scale, to genius, which is at the top—the influence of education is at its minimum at the two ends of the series. On the idiot it has hardly any effect: unheard-of exertions and prodigies of patience and ingenuity often produce only insignificant and transient results. But as we rise towards the middle degrees this influence grows greater. It attains its maximum in average minds, which, being neither good nor bad, are much what chance makes them; but as we ascend to the higher forms of intelligence, we see it again decrease, and as we come nearer to the highest order of genius it tends towards its minimum.

“So variable is the influence of education that we may doubt whether it is ever absolute. It is needless to cite facts from history, which tells only of men of eminence or distinction—we need only appeal to everyday experience. It is not rare to find children sceptical in religious families, or religious in sceptical families; debauched men amid good examples, or ambitious men in a family of retiring, peaceable disposition.”

Civilisation is the result of the education of many centuries, yet, as Carlyle has said, it is but a covering, underneath which the savage nature of man continually burns with an infernal fire. The cases are numerous in which an attempt has been made to introduce civilisation among savages, with but small result. Even where young children have been taken and educated in European countries the tendency to relapse into barbarism on the first opportunity is very strong:—

“The missionary societies sometimes adopt Chinese infants, and have them educated in European institutions at great expense; they go back to their own country with the resolve to propagate the Christian religion, but scarcely have they disembarked when the spirit of their race seizes upon them, they forget their promises, and lose all their Christian belief. It might be supposed that they had never left China.”

Professor Ribot further cites the case of a native of the Philippine Islands who was seized by the Spaniards when about three years old, carried to Manilla, and baptised under the name of Pedrillo. He was adopted by an American, who educated him, took him to New York, Paris, and London, only bringing him back after two years of travel. He had then become, to all appearance, a fine gentleman, and could speak fluently Spanish, French, and English. Soon after his return he disappeared, and was afterwards discovered, by a naturalist who had made the ascent of a

mountain near Manilla, in the midst of his black countrymen—a savage among savages.

The question of the advantage or disadvantage of consanguineous marriages is discussed by Prof. Ribot at some length, and it may be interesting to collate his remarks on the subject with the mass of information afforded by Mr. Alfred Huth, in the work which stands second on our list. This question is still an unsettled one. The usages of society in different ages and nations have been very different; and the opinions of scientific men as to the good or bad effects of such marriages on the general development of the human race are very various.

“According to Darwin, the consequences of close interbreeding in animals, carried on for too long a time, are generally believed to be loss of size, of vigour, and of fertility. He cites the opinions of several breeders in confirmation of this. Yet with cattle there can be no doubt that close interbreeding may be long carried on advantageously with respect to external characters, and with no manifestly apparent evil as far as constitution is concerned. Bates, a well-known breeder, says that interbreeding with bad stock is ruinous and disastrous, but with first-class cattle it may be practised safely within certain limits. A flock of sheep has been kept up in France during sixty years without the introduction of a single strange ram. With pigs, on the other hand, long-continued interbreeding is attended with the most disastrous results. Mr. J. Wright, well known as a breeder, crossed a boar with his daughter, granddaughter, and great granddaughter, and so on for seven generations; the result was, that in many instances the offspring were sterile, others died, and among those which survived a certain number were idiotic, incapable of sucking, or walking straight. As regards birds, Darwin finds a considerable number of proofs which condemn unions between the same blood. He refuses to consider the question as it concerns man, ‘since it is there surrounded by prejudice;’ still he seems not to be in favour of consanguineous marriages.”

Prosper Lucas and Boudin condemn such marriages unreservedly—the latter relying on a large number of facts and statistics which, he thinks, tend to show that consanguinity is in itself essentially detrimental to the human race, without the concurrence of any other morbid cause. “Aristocracies obliged to recruit their numbers from among themselves become extinct,” says Niebuhr, “in the same way, often passing through degeneracy, insanity, dementia, and imbecility.” Esquirol and Spurzheim attribute the frequency of insanity among the great families of France and

England to this cause; and it is now a very general belief among physiologists that deaf-mutism often has a similar origin.

"It would not, perhaps, be rash," says Prof. Ribot, "to see an effect of consanguinity in the premature decline of the Lagidæ and of the Seleucidæ. The Lagidæ, from Ptolemy Soter down to Cleopatra and Cesarion (B.C. 323 till B.C. 30), reckon sixteen sovereigns, and the Seleucidæ, from Seleucus Nicator to Antiochus Asiaticus (B.C. 311 till B.C. 64), reckon twenty. They often married their sisters, their nieces, or their aunts. Moreover, when the marriages were not consanguineous alliances were formed between these two effete families, the Lagidæ nearly always marrying Seleucidæ, and the Seleucidæ marrying Lagidæ. Now, it is certain that these races were in a state of perpetual decay in proportion as they became more remote from their two or three first founders."

Several authors, on the other hand, attribute good results to consanguineous breeding, especially among animals; but Prof. Ribot regards the facts cited by them as exceptional. M. Quatre-fages endeavours to reconcile these opposing opinions by a theory which virtually places consanguinity outside the category of morbid causes. "The consequence we are to draw from all these facts," he says, "would appear to be that near relationship between father and mother is not in itself hurtful, but that, in virtue of the laws governing heredity, it oftentimes becomes so; and hence, in view of the eventualities to which consanguinity leads, it is at least prudent to avoid consanguineous marriage."

Mr. Huth's book, though written in a rather diffuse style, is an interesting study of the copious literature of the subject. It, in fact, amounts to a defence of consanguineous marriages, upon which, he thinks, a deal of unjust obloquy has been heaped. He starts with the dogma that unwise restrictions upon marriage tend to produce immorality, and that we have no right to prevent marriages unless we are pretty certain that they will produce unhealthy offspring; and complains that we prohibit consanguineous marriages without sufficient reason. He then puts the following questions:—

"I. Whether consanguineous marriages are themselves, by the mere fact of consanguinity, and irrespective of any inheritance, injurious to the offspring? Whether, in a marriage between two relatives who are both perfectly healthy, live under healthy conditions, and whose families are perfectly healthy, the children born will probably be unhealthy?

"II. Whether consanguineous marriages give a greater proportion of

unhealthy children than non-consanguineous marriages; or, in other words, whether it is a fact that consanguineous marriages, through intensification of a previously dormant hereditary family taint, give a greater proportion of unhealthy children?

"The first," he says, "is a question of creation; the second a question of inheritance. Hence we may safely apply experiment on the organic world to the former, and the result, when no harm is done, will be favourable to the harmlessness of these marriages; but, if there are any evil results, we cannot say they were created by the consanguinity, since we cannot know but that inheritance has come into play. Hence, for the first question, the only method of investigation is a negative one. For the second question the only method is a statistical inquiry, so contrived as to include the whole population of a large country; that is, so contrived as to overpower, as far as possible, disturbing causes."

He complains, with justice, of the insufficiency of the statistics hitherto obtained, and of the apathy of the Governments of civilised countries, who have never taken proper pains to obtain them on a larger scale.

Space will not permit us to follow him through the chapters in which he gives an interesting account of the marriage laws and customs in various ages and nations. The facts he brings forward are, we think, sufficient to show that consanguineous marriages, even when of the closest nature, do not necessarily produce unhealthy children, at least until the process of breeding in-and-in has been continued for some generations; and further, that it still requires to be *demonstrated* that in-and-in breeding, even when thus continued for generations, tends to increase the amount of sterility, deaf-mutism, &c., latent in the race. We cannot, however, think that the evidence he has brought forward is sufficient to overthrow the theory that in-and-in breeding is, on the whole, deleterious to the human race.

Among the examples of close interbreeding which Mr. Huth cites in support of his position, we may mention that of the Ptolemies, which family Prof. Ribot, as we have seen, regards as having manifestly suffered from the process.

"Niebuhr assures us," he says, "that a visible curse rested on the dynasty of the Ptolemies, a conclusion he seems to have come to from that preconceived notion which so many people have, for he tells us that several physiologists assert that such marriages lead to scrofula, idiocy, &c., and that their evil results are clearly seen in those villages where the peasantry intermarry among themselves. This assumption I have

considered below ; but that the Ptolemies were under a manifest curse is most certainly an unwarrantable assertion. In their genealogical table it may be seen that they were neither sterile nor particularly short-lived. That they were not more subject to disease than would be expected from their luxurious habits, or stupider than the generality of people, we gather from history—nay, some of them were singularly sharp-witted ; Cleopatra, the daughter of a brother and sister, great-grand-daughter of another brother and sister, and a great-great-grand-daughter of Berenice, who was both cousin and sister to the husband, might, with advantage, compare in astuteness to Catherine de Medicis, of France.”

The decline of the Ptolemies he attributes to the general increase of vice in the nation. In more modern times he gives instances of isolated communities closely intermarrying among themselves, and yet not appreciably suffering from it. In Pitcairn Island, where the interbreeding must be pretty close (though how close Mr. Huth does not inform us), the general health of the population is said to be good:—

“As to their health, all observers agree nothing could be better ; that they are strong, and average six feet in height. Both sexes are well-formed and handsome, and their children uniformly enjoy good health, while the women are almost as muscular as the males, and taller than the generality of females. Parturition was easy, seldom lasted over five hours, and had never proved fatal. Captain Waldegrave saw but one defective person—a little one-eyed boy.”

“A very remarkable case is given by Dr. Thibault of a Portuguese slave-dealer named Souza, who died in the year 1849, at Widah, Dahomey, leaving behind him 400 disconsolate widows, and about 100 children. By order of the King, the whole of this family was interned in a particular part of the country, where reigned the most complete promiscuity. In 1863 there were children of the third generation ; and Dr. Thibault, who verified the fact himself, asserts that at that time, although these people were born from all degrees of incestuous unions, there was not a single case of deaf-mutism, blindness, cretinism, nor any congenital malformation.”

One such fact as this, if it be reliable, is sufficient to demonstrate that consanguineous marriage is not *per se* a cause of physical degeneracy ; at least, for some generations. It does not, however, prove that the theory (which is, *à priori*, a rational one), that such marriages tend to foster morbid heredities, is false.

In a chapter “On the Alleged Benefits of Change of Blood in

Mankind," Mr. Huth attacks the notion that crossing is necessarily beneficial:—

"If crosses," he says, "act by virtue of being a cross, and not by virtue of removing an hereditary taint, then the greater the difference between the two animals crossed, the more beneficial will that act be. But it is an undoubted fact that the wider the difference the less good is the result as a rule."

In crossing races of mankind widely different from each other, such as a white with a Hindoo or Negro, he tells us that—

"The marriage will prove barren, or the progeny will prove barren; and, besides, have so unsettled a temperament, that these beings are known all over the world as the worst class of mankind."

He has but a poor opinion of half-breeds. Several articles have recently appeared on the demoralised nature of the Eurasians, or half-breeds between British, Portuguese, Dutch, or French Europeans and Hindoos. "The dangerous character of this element in the society of our Eastern Empire," says *The Times*, "has long been recognised. The Eurasians, with a few remarkable exceptions, have shown all the vices of both the parent races, and hardly a sign of the virtues of either Europe or Asia. Truth, honour, and honesty have been almost as rare among the men as chastity among the women. The sincerity and endurance of the Anglo-Saxon, the gravity, dignity, and temperance of the Hindoo, are lost in the Eurasian character." He gives many interesting particulars with regard to other half-breeds between various races.

Professor Ribot, who is much less of a partisan than Mr. Huth, having no pet theory to protect, while acknowledging that when two races, low in the scale, are crossed, the result is often "eminently bad," gives instances of the crossing of races where the progeny is, at least, equal to the parent races. The remark of the African to Livingstone—"God made white men, and God made black men, but the devil made the half-castes"—was probably just in Africa; but the Pitcairn Islanders, whom Mr. Huth himself praises highly, are sprung from half-castes between Englishmen and Tahitians. In Brazil the half-castes are noted for artistic genius; and in Venezuela, M. Quatrefages says that Mulattos have been distinguished as orators, publicists, and poets.

In the next chapter Mr. Huth attacks the argument of those who regard the existence of the sexes as a provision for crossing.

His objection to the theory of reproduction of Spenser strikes us as being futile. Spenser supposes that the sperm and germ-cells have arrived at a state of molecular stability which is upset by their union, and that development arises from the loss of equilibrium thus produced:—

“Hence,” says Mr. Huth, “if this theory be true, it follows that the more alike two individuals are, the less likely they are to be fertile; and the more unlike two individuals are, the more likely are they to be fertile.”

But, practically, we find that there is a golden mean in all things, and Spenser's theory may be true without pushing it to such a conclusion as this. There may be a point on which the loss of equilibrium is excessive. Mr. Huth explains the existence of two sexes as simply a contrivance for the division of labour—the female produces offspring, the male defends and provides for them.

The general conclusion at which Mr. Huth arrives is, that “not one of the many reasons which have been advanced why marriage between near kin should be prohibited by the State can stand inquiry.” There is no “natural horror of incest” either among the lower animals or mankind; it has been habitually practised without any conscious experience of bad results; the statistics on the subject are unreliable; the benefits of crossing are non-proven; the duality of sex is otherwise accounted for; and, finally, the evil results ascribed to in-and-in breeding may be, and most probably are, due to other causes:—

“Marriage,” he thinks, “should therefore be only prohibited in those degrees which by general consent are considered incestuous; that is in the direct ascending and descending line, between brother and sister, and uncle and niece; or those degrees which as a rule imply an unsuitable difference of age between the parties.”

In fact Mr. Huth appears to be such a thorough-going advocate of in-and-in breeding that it is with reluctance he goes thus far. The only reason he can see for prohibiting the marriage of a brother and sister is, that “if brothers and sisters were allowed to marry, they would do so while yet too young.” He appears to be unable to see that the question has a moral as well as a physical side, and that there may be moral reasons why the breeding of the human race cannot be conducted on *exactly* the same principles as those of the lower animals. It is quite possible that the closest in-and-in breeding may be practised among barbarous, or even the more

civilised, races without physical degeneration, and yet the moral effects, which he ignores, may be bad. We cannot now go into a discussion of the subject; but we think it must be evident that the civilised instinct, which regards incest with such horror, may have some useful purpose in the development of mankind. Our social relations become more complicated as civilisation progresses, and the social laws which tend to produce other relations between the sexes than those which have reproduction for their immediate object, have a sacredness and importance of their own. The purity and beauty of the relations between husband and wife may, and we think do in fact, in no small degree depend upon the secondary relations between father and daughter, mother and son, and brother and sister, as they exist among civilised nations.

On the whole Mr. Huth's book is very interesting. We cannot think that his facts (often derived from the hasty observations of travellers) are always reliable, or that his arguments, which he is inclined to push too far, are always conclusive; but we do think that he has shown that the ill effects of close inter-breeding have been a good deal exaggerated.

Space will not permit us to follow Prof. Ribot through the last chapters of his book, in which he discusses the question, as to how far individual spontaneity is consistent with heredity. He regards the question, which is but the practical aspect of the metaphysical antinomy between necessity and free-will, as an insoluble one.

JOHN TODHUNTER.

RECENT WORKS ON PHYSIOLOGY.

1. *Elements of Human Physiology*. By DR. L. HERMANN. Translated from the fifth German edition, by ARTHUR GAMGEE, M.D., F.R.S. London: Smith, Elder, & Co. 1875. 8vo., pp. 587.
2. *Nouveaux Eléments de Physiologie, comprenant les Principes de la Physiologie comparée et de la Physiologie Générale*. Par H. BEAUNIS. Paris: J. B. Baillière et Fils. 1876. 8vo., pp. 1,140.

THE want of an English book which would represent the present condition of physiological science has long been felt. It is generally admitted that the older text-books in use in this country, notwith-

standing the labour bestowed on their later editions, fail to represent the science of physiology as it actually exists. We think, therefore, that the appearance of Dr. Gamgee's translation of Hermann's well-known work is an event of some importance to the students and teachers in our schools.

The great popularity which Hermann's handbook has acquired in Germany is best shown by the rapidity with which it has gone through its successive editions, the first having been published in 1863; and we trust that in this country its success will be no less than that which it has enjoyed in its native land.

The great feature of the book seems to us to lie in its comprehensiveness and the large amount of matter which the author has compressed into a small compass. There is scarcely an experiment or current physiological theory which does not find mention; but while this completeness makes the book most valuable to teachers and to advanced students, we greatly fear that the condensation of the matter is so great that beginners will find many parts almost unintelligible, from the extreme brevity and want of detail with which the statements are made. Indeed, throughout, the pages read very like those of a well-arranged note-book.

The work is divided into four parts. The first deals with "The Exchanges of Matter of the Organism," and, besides a chemical introduction, includes chapters on "The Blood and its Circulation;" the sources of loss to the blood, or "Secretion;" the reception of matter into the blood, "or Digestion and Absorption;" the gaseous interchange of the blood, or "Respiration;" and the exchange of matter as occurring in the blood itself and in the body as a whole.

The second part treats of "The Activities or Energies of the Body" ("Die Leistungen des Organismus"), and, after an introductory chapter on "The origin and Expenditure of Energy in the Body," contains chapters on "Animal Heat" and "The Energy of Mechanical Work." In this division the general physiology of the muscular system is given, and, in an appendix, are considered the mechanism of the skeleton, the conditions of equilibrium and of active locomotion of the whole body, the voice, and speech.

The third part has to do with "The Liberating Apparatus" ("Die Auslösungs Apparate"), or the nervous system. The chapters in this part are on "The General and Special Physiology of the Nerves;" on their peripheral end-organs, or "Organs of Sense;" and on their central end-organs, or the "Central Nervous System."

The fourth and concluding part is on "The Origin, Development, and Death of the Organism."

It will be seen that the arrangement is simple and eminently scientific.

The difficulties in the translation of such a work as this must be, as Dr. Gamgee points out in his preface, extremely great, for English equivalents have to be found for many words and expressions which up to the present have never been translated, and, as these equivalents will probably henceforth form a part of English scientific nomenclature, a great responsibility rests with the translator who introduces these terms. We think, however, that there will be no second opinion as to the ability with which Dr. Gamgee has met these difficulties; and writing, as we do, with a good knowledge of the original, we can express ourselves of the translation only in terms of the most unqualified praise.

Dr. Beaunis' work also is divided into four parts. In the first, entitled "Prologomena," the general questions which serve as an introduction to human physiology are treated of, such as the correlation of forces, the characters of living beings, &c.

The second part is devoted to "Physiological Chemistry."

The third part, which forms the great bulk of the volume, treats of "The Physiology of the Individual." A first section deals with general physiology, cellular physiology, the physiology of the tissues, and the general physiology of the organism. A second section comprises the special physiology—that is, the consideration of the functions of the human organism.

The last part is on "The Physiology of the Species."

In the Introduction to the volume we find directions for the building, furnishing, and working of a physiological laboratory, and in the different chapters directions are given for the performance of many of the principal physiological experiments. These directions are, however, necessarily very brief, and do not appear to us to add much to the value of the work. Each chapter concludes with a short list of bibliographical references, and the volume concludes with a remarkably good Index.

We can recommend this handbook to our readers as in many respects a very useful work, although we think that in arrangement and execution it falls far behind that of Hermann.

An Introduction to Animal Morphology and Systematic Zoology.

By ALEXANDER MACALISTER, M.B. (Dubl.); Professor of Comparative Anatomy and Zoology, University of Dublin.

Part I.—Invertebrata. London: Longmans, Green, & Co. 1876.

THE progress made in the Natural Sciences of late years has been conspicuous in zoology, in which a complete reformation has taken place, not only in methods of research and their extension, but also in systems of teaching. The time-honoured classifications of Cuvier and Linnæus have gradually given place to others founded on profound studies in connexion with internal as well as external structure; in other words, Morphology, which includes Anatomy, Histology, Development (Ontogeny), and Taxonomy; in fact, the tracing of the life-history of the animal or plant step by step; its comparison with allied forms and position in the kingdom to which it may belong; physiology, distribution, and etiology terminating the aspects under which biological objects are now studied. Thus little is left to be desired in perfecting the systematic mode of procedure adopted by the zoologist of the present decade; what may result in the future, at the rate at which the studies of life-objects are advancing, it is impossible to say. The late introduction of Natural Science into the undergraduate course in Trinity College is one of many indications of the growing application of biological studies which in former years were considered incompatible with the *humaniora*. Again, in the teaching of Natural Science, the present system of practical instruction, whereby the student is no longer confined to the dry details of a lecture, but has also opportunities of examining the objects for himself in the laboratory, is unquestionably the only certain method of gaining a sound knowledge of biology; indeed, there can be no doubt that much of the unpopularity of zoology and botany has been owing to the absence of practical instruction.

To such of our readers as may not have followed the steady advancement of zoological researches during the last quarter of a century, the work now before us will seem to be far beyond the comprehension of the ordinary University student, and we must admit its applicability lies more with the advanced scholar and teacher than with the beginner; but as a repertory of latter-day facts and hypotheses in connexion with the morphology of the invertebrata, it has assuredly no rival in British literature.

The prefatory chapters, we think, might be extended with advantage by giving more details in connexion with general Morphology, Distribution, and Animal Tissues. The study of the origin of species is rather ingloriously defined by the author as "a favourite subject of theory," as if it were a sort of mental gymnastic in which biologists occasionally indulge. Now, say what opponents may of the Theory of Evolution, there is no gainsaying the fact that the marvellous strides made in biology since 1860 are owing, in a great measure, to the writings and teachings of Charles Darwin; surely, therefore, in common with the Special Creation Theory, it ought to claim no stinted space in a volume on Morphology.

The illustrations might also be judiciously increased with reference, more especially, to the explanation of certain objects, the majority of the present woodcuts being merely the common representations of elementary works on zoology; it would, moreover, be of great advantage to the reader if a List of Authorities were given, with allusions thereto throughout the text. Having indicated these few points, we have nothing but unqualified expressions of commendation to bestow. The author divides the Animal Kingdom into the two great sub-kingdoms, the Protozoa and Metazoa. The former includes the lowest forms of animal life, bordering on the vegetable kingdom, and distinguishable by having no definite body cavity, whilst the presence of the latter constitutes the Metazoa, which are divisible into two series, the Polystomata or sponges, and the Monostomata. Under the latter are grouped the Cœlenterata, Echinodermata, Vermes, Mollusca, Arthropoda, and Vertebrata. The best classification must, however, be considered provisional; but as far as present knowledge extends, the above represents the morphological aspect of the Animal Kingdom, although it differs in some respects as regards the position of certain groups from that of Professor Huxley; at the same time, like that distinguished teacher, Professor Macalister takes every opportunity, as far as modern research has yet penetrated, to point out to the student the embryological characters of natural objects, and their relations and affinities, which, with more extended observations, seem destined to form the basis of future classifications of both the Animal and Vegetable Kingdoms.

The work will be found an invaluable addition to the library of the working zoologist, and both teacher and taught will find it a vast storehouse of learning; indeed, there is difficulty in criticising

a volume like the present, where the materials are packed close together without argument or commendation.

We trust the second volume on the Vertebrata will rapidly follow its predecessor, and complete a labour alike creditable to the author and to the University of Dublin.

A. L. A.

A Treatise on the Fractures of the Lower End of the Radius, &c.

By ALEXANDER GORDON, M.D., Professor of Surgery in Queen's College, Belfast. Pp. 79. London: J. & A. Churchill, New Burlington-street.

THE fractures which occur at the lower extremity of the radius have received a very large share of attention from surgeons. In this country Mr. Colles was the first to attempt an explanation of the mechanism by which one particular form was produced, and he was followed by the late Professor Smith, in his masterly work upon "Fractures and Dislocations." Professor Gordon has also been an investigator in the same direction, but he is best known probably in connexion with the treatment of the injury which, simply produced as it is, presents many difficulties and complications in its progress towards recovery. To arrive at a true principle of treatment, Professor Gordon has made a number of examinations of old and recent fractures, and by this means he has come to the conclusion that much of what has hitherto been taught as to the mode of production is erroneous. Smith held that in these cases, owing to "the influence upon the one part of the weight of the body and the impulse of the fall, and upon the other of the resistance given to the hand by the ground, the radius, which receives almost the whole force of the shock, breaks at its weakest part—that is, its lower extremity, for it is here that the cellular tissue is most abundant, and the compact tissue thinnest."

Now, Gordon believes that if this were correct, the carpal surface of the radius would show a fracture radiating from the point of impulse. But as there is no evidence of this, and as the fracture is sometimes found only a few lines above the carpal surface, it may, he thinks, be "justly inferred that the force has neither acted from below upwards nor from above downwards, but transversely, or at right angles to the axis of the radius." He finds an explanation of this result in what mechanics call a "cross-

breaking strain," produced by the forced extension of the hand:—"I soon," he says, "resolved the matter by experiment. Selecting in the dissecting-room the extremity of an aged subject, I placed my left hand firmly upon the lower end of the back of the radius. With the right I seized the hand, bent it back forcibly, when the radius broke easily, and the fracture thus produced was similar to several of the old specimens in the College collection. Several of the students who were present, observing the ease with which the fracture was produced, soon began to experiment on the extremities which they were dissecting, and in a very short time all the more important varieties of Colles's fractures were represented by artificial ones."

We cannot go into the lengthened discussion by which Mr. Gordon defends his views; but on the question of treatment he is at issue with many authorities. The splint which is known by his name he has further modified by hollowing out the lower part of the posterior part of it, to receive the inner margin of the hand, so as to press the carpus inwards towards the ulna, while the carpus is also pressed well forwards by a portion of the apparatus prolonged on the back part of the hand. The radial keeled splint remains as before.

Mr. Gordon has also chapters upon fractures of the clavicle, and their treatment by a new splint, and on the reduction of recent dislocations of the shoulder by manipulation. He holds that there is no real depression of the shoulder in fracture of the clavicle; that to push the shoulder upwards, backwards, and outwards must increase the deformity, as this movement deprives the scapula of the support of the thorax, and that the only requisite condition in the treatment is to rotate the shoulder outwards and backwards. The splint consists of "a body plate and artificial clavicle or rod riveted to a front arm-splint; to the anterior border of the latter is attached the second arm-splint. The body plate rests against the side, fore, and back part of the thorax;" and it is kept there by a strap passing over the opposite shoulder. The splint is useful for fractures of the humerus, or in cases of excision.

The method of reduction of dislocations of the humerus by manipulation has already been communicated to *The British and Foreign Medico-Chirurgical Review* for 1866, and since then Dr. Gordon has adopted it with success in twenty cases.

There are some portions of the book in which Dr. Gordon is hardly as clear as we could wish; but the treatise is one highly

creditable to the industry and ingenuity of its author. Our own experience of the radial splint devised by him is that it is superior in comfort to the patient, and in excellence of result, to any other with which we are acquainted.

In these pages Dr. Gordon gives us the results of observations during a long professional life. No one reading them will fail to admit the laborious care with which he has investigated the points which he undertakes to discuss, and although these may not always be accepted as proved, the surgeon will find in the book a great deal to interest and instruct him.

The Geographical Distribution of Heart Disease and Dropsy, Cancer in Females, and Phthisis in Females in England and Wales. Illustrated by Maps. By ALFRED HAVILAND, Member of the Royal College of Surgeons of England; Medical Officer of Health to the Combined Sanitary Authorities in the Counties of Northampton, Leicester, Rutland, and Bucks. London: Smith, Elder, & Co. 1875.

THE investigations of Mr. Haviland into the geographical distribution of disease in England and Wales, which have from time to time been presented piecemeal to the profession and the public, are now for the first time published in a collected form in the handsome volume before us. Mr. Haviland has the credit of being the first to endeavour, unknown to himself, to fulfil the remarkable anticipations of Dr. Farr, published in his letter to the Registrar-General in 1839, when the first annual record of births and deaths in England and Wales made its appearance. Dr. Farr's statement is so remarkable that we quote it at length:—

“The registration of the diseases of the several districts will furnish medical men with a series of valuable remedial agents. It will designate the localities where disease is most rife, and where there is the most tendency to particular classes of sickness and infirmity.

“In recommending a residence to patients, the physician will find the registered causes of death an indispensable directory, and the utility of a *sanitary map of the country*, such as the returns will furnish, cannot fail to be felt in England, where a part of the population is constantly migrating from place to place in search of health.

"Much information has been collected respecting the influence of the British climate, but the facts will bring to light many salubrious spots hitherto unknown, and disclose the dangers which infest others unsuspected.

"Invalids resort to some unhealthy places, families carrying their children, in autumn, where small-pox and measles are often epidemical, and where bowel complaints and fevers are extraordinarily fatal."

It must be very gratifying to Dr. Farr to see this first attempt at the realisation of his anticipations.

We are glad to find that Mr. Haviland has, by Mr. Low's assistance, had the aid of the Treasury in carrying out his observations, as well as the co-operation of the officials at the office of the Registrar-General.

Mr. Haviland's work consists of three distinct sections, one being devoted to each of the three diseases named in the title. The author fully admits the difficulties of the questions he deals with, and the many elements of uncertainty which tend to complicate the data and vitiate the conclusions. Mr. Haviland has wisely selected those diseases which stand highest among the causes of death in England and Wales, and which at the same time are tolerably well-defined. There is no attempt made to limit the definition of "heart disease and dropsy," phthisis, or cancer, to any specific pathological conditions, our author takes them as he finds them, and draws what appear to us to be perfectly legitimate conclusions.

The method followed for mapping out the districts in which the diseases prevail, depends almost altogether upon the system which has been adopted by the Registrar-General in dividing the country for registration purposes. Thus England and Wales is divided into 11 Registration Divisions, 53 Registration Counties, and 623 Union Districts. The plan pursued is to map the degrees of mortality according to each of these series of divisions, from the largest down to the smallest, to compare the result of each mapping, and to draw conclusions from the facts thus established. A more accurate and fair system of investigation could scarcely be desired. The work is illustrated by coloured maps, illustrating each series of comparisons.

We regret that space will not permit us to follow Mr. Haviland through his many and ingenious analytical details. We must, therefore, content ourselves with giving his conclusions with regard to the three diseases which he discusses.

Firstly, as to *Heart Disease and Dropsy* :—

“The highest mortality districts are always to be found in the most sheltered spots, and generally those that are *leewardly* nearest to the sheltering range.

“The districts having the lowest mortality are, on the contrary, some of the most exposed in England and Wales.”

It is proved by the observations here recorded that wherever the country is exposed to the free access of the sea-air and plentiful breezes, in such places the mortality from heart-disease and dropsy is low, and *vice versa*. The author believes—

“That the great majority of heart-disease cases in our country have their origin in rheumatism, and that the disease in many parts of England is endemic.

“Heart-disease, if we use the term generally, has almost every variety of cause imaginable; but *the* rheumatic heart disease, which kills in such large proportions, is of insidious growth, often unsuspected in youth, and frequently allowed to remain unheeded until it has taken too firm a root to be removed. I believe that it does not require a regular attack of rheumatic fever in order to set up disease in the heart. My experience, extending now over nearly a quarter of a century, in hospital and private practice, leads me to believe that in certain localities rheumatic disease begins to show itself very early in life, and that from neglect of the first symptoms much mischief accrues. In the agricultural districts we see too frequently the crippling effects of chronic rheumatism.

“In agricultural districts low wages and low living conspire to render the body unfit to contend against the external influences which are to be found in certain districts; an ill-fed agricultural labourer turns out early in the morning to attend to his duties in the fields, often before the dew is off the ground, when the air is most chill,” &c.

It may be some comfort to town artisans, who are poisoned by noxious atmospheres of over-crowded tenements and workshops, to hear that their country brethren are liable to preventable diseases, consequent on the conditions under which they live. We believe that there are thousands among the best educated classes of the public who, if asked their opinions as to the comparative probability of contracting rheumatism at a blustery sea-side, or a sheltered inland valley, would at once reply that the former is the more rheumatic of the two.

Secondly.—In the consideration of the *Distribution of Cancer*, our author confines himself to the consideration of that disease as

it affects females, on the very reasonable grounds that this disease affects each sex through very different organs, and is much more fatal in the female than in the male. Mr. Haviland's conclusions with respect to the distribution of cancer in females are as follows:—

"1. That, geologically, the hardest and most elevated rocks, or the most absorbent, like the oolite and chalk, are the sites where the least mortality from cancer is found.

"2. That along the river-courses which flood their banks seasonably—such as the Thames, the Severn, the Mid-Devon, and Yorkshire rivers—are to be found the districts in which the highest mortality takes place.

"And 3. That wherever, from the nature of the rocks forming the watershed, the floods are much discoloured by alluvium, and where, from the flatness of the country, the floods are retained and not easily drained off, there we find the greatest mortality from cancer among females."

Thirdly.—The consideration of the geographical distribution of *phthisis* is like that of cancer—confined to the female sex only. The object of this limitation is to secure an exact comparison between the distribution of cancer and *phthisis*. This comparison establishes the very remarkable fact that the geographical distribution of *phthisis* and cancer are almost the converse of each other. In England and Wales there died of *phthisis*, during the decade 1851–60, more than half a million (508,923) of the population. Of this half million, about one-half, or 269,618, were females—a sufficiently large number from which to draw sound conclusions. These are as follows:—

"1. That, coincident with sheltered positions, is a low rate of mortality from *phthisis*.

"2. The distribution of *phthisis* is almost the converse of that of cancer, and differs remarkably from that of heart-disease.

"3. The easterly ridges of the south-east of England are characterised by high mortality, and this high death-rate is coincident with a general aspect favourable to the malign influence of the east wind.

"4. Damp clayey soil, whether belonging to the wealden, the oolitic, or the cretaceous formations, is coincident with a high mortality.

"5. The warm, fertile, ferruginous red sandstone tracts of country are remarkable for forming the sites of the most extensive series of low mortality groups throughout England.

"6. The high elevated regions of non-ferruginous and infertile carboniferous limestone and coal formations, and the elevated, hard, infertile, and non-ferruginous Silurian formations, form the sites of the most extensive series of high mortality districts.

"7. The elevated parts most exposed to the westerly and north-westerly wind, and to the easterly and north-easterly, are characterised by high mortality.

"8. A sheltered position, a warm, fertile, and ferruginous soil, well drained, are coincident, as a rule, throughout England and Wales, with low mortality from phthisis."

It is right to state that Mr. Haviland analyses more minutely the distribution of deaths (from the various diseases treated of) within the metropolitan area. The conclusions arrived at with regard to England and Wales are equally applicable to the metropolis. Mr. Haviland very properly takes exception to the present unsatisfactory method (if method it can be called) of dividing the country for registration purposes. The districts have been formed without any regard whatever to their natural relations to the geological formations or watersheds of the country, which Mr. Haviland shows to be some of the main factors in determining the salubrity of a district.

Mr. Haviland hints that we may soon expect more information from his pen, and we trust that further additions to his useful work will not be long delayed.

THOMAS WRIGLEY GRIMSHAW.

Illustrations of Clinical Surgery. By JONATHAN HUTCHINSON, F.R.C.S. No. III. London: J. & A. Churchill, New Burlington-street.

THIS fasciculus contains four additional plates, comprising osseous nodes in inherited syphilis, mercurial teeth, chronic ulcerative rheumatic arthritis, and cheiro-pompholyx. This last represents an affection regarding which some dispute has arisen since attention was directed to it by Mr. Hutchinson. The case to which he refers was that of a lady of about fifty years, who had been from her youth the subject of ailments having reference to her nervous system. The symptom which was most prominent was the occasional occurrence of a peculiar eruption upon the hands. Ushering in the attack, there was usually a sense of burning in the hands and feet; then a number of deeply-placed little blebs would show themselves by the sides of the fingers; in a few days these would coalesce, and enormous bullæ would result. There was generally, at the same time, a red lichenous rash over the whole

body. It was never at its height for more than a few days, and the hands were restored to their ordinary condition in a few weeks. Mr. Hutchinson believes this to be a neurosis.

On the other hand, it may here be mentioned that Dr. Tilbury Fox claims to have described this eruption three years ago under the name of dysidrosis. He declares that it is not a pompholyx at all; that it is not confined to the hands; that it is not produced by effusion of serum into the skin, but by distension of the sweat apparatus and uplifting of the cuticle by sweat, the bullæ being the result of the coalescence of smaller vesicles.

Mr. Hutchinson contributes a highly interesting paper on mercurial teeth, a subject which has already been referred to in this Journal for June, 1875. The cases are given with the care which the author always exhibits, and will suggest new points for observation to practising surgeons and physicians.

Evolution of the Human Race from Apes, and of Apes from Lower Animals; a doctrine unsanctioned by science. By T. WHARTON JONES, F.R.S., F.R.C.S., &c. London: Smith, Elder, & Co. 1876. Pp. 70.

THE author of these lectures (delivered in the Botanical Theatre of University College) is well known as a man of high scientific standing and of original research. It is, therefore, to be regretted that he should have published a work which will certainly not add to his fame. Starting with the postulate that evolution and revelation are incompatible, he has, with very well-meant zeal but with very indifferent logic, endeavoured to show cause for the rejection of the former. His argument amounts to a simple denial of the deductions drawn by evolutionists from the morphological constitution of animals, as well as a heaping of very hard names on those who differ from him; they are "half-informed persons," "amateur anatomists" accumulating "ill-observed and illogically-explained facts;" and such as believe that Theism and evolution are compatible are "a weak-minded class, committing an absurdity." The first lecture reviews Mr. Darwin's "Origin of Man." The second lecture is devoted to a satirical criticism of Professor Haeckel's "Anthropogenesis," in which he denies (without any argument or attempt at proof) adaptation or differentiation of tissues, and enunciates several very crude morphological doctrines regarding the structure

of arthropods, and rejects (also without adducing proof) the theory of relationship of the caudal notochord of ascidians to the notochord of vertebrates. While the motive of Mr. Jones is one deserving of respect, yet he should have remembered that a tirade of hard names is not argument, and is very much more liable to weaken his cause than to support it; certainly, the anti-evolution position has been in no way strengthened by the publication of these lectures.

Principes de Thérapeutique Générale. Par DR. J. B. FONSSAGRIVES. Paris: Baillière et Fils. 1875. Pp. 472.

A PROLIFIC and accomplished author, writing with that ease and grace of expression which are so peculiarly French, M. Fonssagrives has produced a recent work, to which we gladly direct the attention of our readers. For the past twenty years his pen has seldom been idle, and when his forthcoming works are published, M. Fonssagrives can claim to have been the author of about 7,000 pages of printed matter.

Insisting strongly upon the view that practical medicine is substantially summed up in the two arts of hygiene and therapeutics, which are closely and necessarily related to each other, and cannot be arbitrarily separated, the author has devoted his earlier labours to the inculcation of the doctrines of hygiene, both physical and alimentary, and now, in his later writings, he deals with its twin-sister, therapeutics. In the present work the general questions which underlie all remedies are discussed, and it may be regarded as an introduction to an extended treatise upon applied therapeutics, upon which the writer has been engaged for twelve years. Within our restricted space we must content ourselves with indicating the main features in the plan of execution of the book, much of which will repay perusal. The Introduction is a vigorous defence of the vitalistic theory of life, due care being taken to vindicate this doctrine from the oft-repeated aspersions that it hinders progress, is jealous of science, and shrinks from strict experimentation. In succeeding chapters we are introduced to the study of the absorption of drugs; their circulation and electivity; their elimination and the chemical changes which they undergo at the seat of application, or in their transit through the system; their action and therapeutic effects, with remarks upon the variability of

their action, the mechanism of their curative effects, and the methods of clinically testing their real value. The latter part of the work naturally contains, after a history and criticism of numerous preceding classifications of remedies, the arrangement proposed by the author.

This plan, instead of grouping drugs according to their properties or physiological action, is based upon the sensible idea of arranging them according to their indications—i.e., the use for which they are wanted, much in the same way as one might arrange surgical instruments in a drawer. It is clinical in its object and analytical in its details, and contains, we venture to think, the germ of a decided advance in the method of discussing therapeutics. We shall be anxious to see how the scheme will look when fully worked out in the author's promised *Traité de Thérapeutique appliquée*.

We will conclude our notice by quoting an expression of opinion in which but few seem to share in these sceptical days:—

“Pour mon compte, arrivé à une période de la vie médicale où les illusions thérapeutiques ne sont plus permises, et où l'on mesure aussi exactement qu'on pourra jamais le faire, la portée d'action des médicaments, je constate en moi un changement inverse de celui dont se plaignait Radcliff, je sens ma confiance thérapeutique grandir tous les jours, parce que je sais mieux ce que je puis demander aux médicaments et ce qu'ils peuvent me donner, parce que je ne vais plus me désoler de mon impuissance là où je sens quelle est celle de la médecine elle-même, et aussi parce que les ressources que la thérapeutique met à ma disposition se sont accrues et s'accroissent tous les jours” (p. 28).

A Guide to the Microscopical Examination of Drinking Water. By J. D. MACDONALD, M.D., R.N., F.R.S. With Twenty-four Lithographic Plates. London: J. & A. Churchill. 1875. 8vo., pp. 65.

THIS is a most useful little book, and one which will be almost indispensable to every one who is engaged in the examination of water for sanitary or other purposes. The plates, which contain a very large number of figures, illustrate nearly all the microscopic objects which are usually present in drinking water, whether these are mineral matters, dead animal or vegetable matter, or living forms of animals or plants. In the letterpress a short, but clear, description of the different forms, together with a systematic

arrangement of the various types, of microscopic animals and vegetables is given. Full directions also are given for the treatment of specimens of water, in order to collect the sediment for microscopical examination. In fact, we have only one fault to find with this book, and that is one which we fear will impair its utility as a guide, particularly to beginners—the magnifying power under which the figures are drawn is not indicated. We trust that in a new edition this deficiency will be made good.

A Handbook of the Theory and Practice of Medicine. By FREDERICK T. ROBERTS, M.D., B.Sc., M.R.C.P.; Fellow of University College; Assistant Physician and Assistant Teacher of Clinical Medicine at University College Hospital, &c. Second edition. London: H. K. Lewis. 1876. 8vo, pp. 815.

WHEN we reviewed the first edition of Dr. Roberts' Handbook some two years ago,* we ventured confidently to forecast the rapid exhaustion of that edition. Our words have come true, and the second issue of this admirable work is now in the hands of the profession. It appears in a greatly improved form; the subject-matter of 1,043 pages—owing to increased size of the sheet—now occupies but 815 pages. Notwithstanding this apparent curtailment, the present edition includes a great deal of new material. Chapter XXVII., on "The Diagnosis of Acute Specific Diseases," illustrates this remark. In it a diagnostic Table of the principal fevers is contained, which cannot fail to be of use to the student and the clinical teacher.

We again deplore the absence of a few good illustrations of the microscopical examination of the urine in Bright's Diseases. Two or three plates of well-executed and truthful drawings would much enhance the value of this standard work on the theory and practice of medicine.

* *Dub. Journ. Med. Science.* April, 1874. P. 326.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—HENRY KENNEDY, M.B., F.K.Q.C.P.

Secretary—E. H. BENNETT, M.D.

Aneurism of the Pulmonary Artery.—DR. KENDAL FRANKS exhibited the heart and lungs of a young man who died suddenly on the morning of the 5th of January, of pulmonary hæmorrhage. He said: The case is one of special interest, as the immediate cause of death was the bursting of a pulmonary aneurism into a phthisical cavity, only one other instance of which has been published in this country, that by Professor Bennett in 1871. The history of the case is as follows:—About five years ago the subject of the disease was employed in a grocer's shop not far from Dublin. He was a tall, slender youth, and in the course of his business had to lift heavy weights. He frequently was exposed to bad weather, and had often to spend half a day in his wet clothes before he could get an opportunity of changing them. During this time he had a severe hæmoptysis, and developed a cough, of which he never got completely rid. Soon after this he left his employment, finding the work too heavy for him, and took a situation as an indoor servant. About three years ago he had another severe hæmoptysis, which compelled him to give up work for a time. During this period the doctor who attended him blistered the right side of his chest, and from the signs which I afterwards found in his lungs I believe he must then have had pleuritis. Shortly afterwards œdema of the feet and legs came on to such an extent that he was unable to put on his boots. This in a short time subsided, and though it returned subsequently, it was transient in its nature, and never intense. The last copious hæmoptysis, previous to that which caused death, took place in April, 1874, when again he had to give up work for three weeks. During the intervals of these bouts of hæmorrhage he constantly had epistaxis, which he found always relieved him of a sense of fulness about the chest and head. The sputa were frequently

also tinged with blood, and the perspirations at night caused him great discomfort, though of late this did not trouble him. In May last I had an opportunity of examining him, and taking notes of his condition. He was a delicate-looking, thin young man, twenty-two years of age, slightly built, and six feet in height, with dark hair and complexion, and a reddish tawny colour over the malar bones. His chest was very narrow anteriorly, and much rounded posteriorly. The right side of his chest was flattened, and did not expand on inspiration to the same amount as on the left side. The superficial veins on this side were also more distinct. The right clavicle was excessively dull and "wooden," making a strong contrast with the left, which, however, was also slightly dull. The whole of the right side was dull; the left side was clear, except for about two inches below the clavicle. Auscultation revealed strongly marked tubular breathing as far down as the sixth rib, after which it became indistinct. There were no râles and no crepitus. Bronchophony was well marked. At the left side compensatory puerile breathing existed over the whole lung. Under the clavicle there was a prolonged expiratory murmur, and well-marked *respiration entrecoupée*. The position of the heart was very remarkable. The impulse was distinctly seen between the second and third costal cartilages of the *right* side, and about two inches from the sternum. Its action was very strong, and the sounds normal.

At this period he was engaged at his work, the duties connected with which he continued to perform up to the 5th of this month. The only remarkable change that was noticed of late was in his temperament. He became very morose and sullen, and disinclined to speak of his health to any one. When questioned, his invariable answer was that he was all right, that he was very well. His fellow-servants told me that during the night he moaned greatly, and that for a month or so previous to his death he had not changed his clothes, but used to lie down in them at night. At times his face had a cyanotic appearance, and occasionally was oedematous. On the morning of the 5th he had a profuse hæmoptysis, and in his attempt to reach a place where he could get some cold water to drink, he fell on the floor. I saw him shortly afterwards. He was lying extended, with a quantity of blood on the floor in front of him, and some clots hanging from his mouth. He was completely comatose and pulseless; death ensued within half an hour. About ten hours subsequently I succeeded in obtaining an examination of his chest, and in securing the lungs, though on several occasions during the course of his illness his parents refused to send him to hospital, fearing that a *post mortem* examination might be made. On opening the thorax, the left lung, uncollapsed, extended a good way across the middle line; it was readily removed. The right lung, very much contracted, was so firmly adherent to the parietes that, in endeavouring to tear through the adhesions,

part of the wall of a cavity in the apex gave way. The pleura on this side was much thickened, and the connective tissue of the lung increased. The whole substance of the lung was infiltrated with fine miliary tubercle, evidently of recent occurrence. Caseous degeneration was readily seen through the lung, and many small pieces of calcified matter. The left lung, which was also studded with miliary tubercle, was most remarkably emphysematous, and cavities existed in the upper part of both lobes. Large clots of blood were found in the trachea and the left bronchus, apparently leading to the apex of this lung. With the kind assistance of Dr. Bennett, a large cavity, almost filled with dark coagula, was found in this situation. Opening into it several smaller cavities were found, and in one of them (see drawing) a small aneurism protruded from its wall. Its colour and appearance were striking, forming, as it did, a marked contrast to the surrounding tissue. It was of a palish yellow, especially at its apex; its anterior aspect was nodulated, and studded over with small bright red points. On that part most remote from the vessel from which it sprung—that is, at its apex—a small, slit-like opening existed; this was sufficiently large to admit the bulb of a probe. The size of the aneurism was scarcely that of an ordinary pea, and the vessel which communicated with it was very small. Owing to this great difficulty was experienced in passing a bristle (Plate, A), which, however, we succeeded in doing, from a large branch of the pulmonary artery, through this small vessel, into the aneurism. The bristle emerged through the slit-like opening. A second bristle was passed down through a small opening close to the root of the aneurism (Plate, B), and finally emerged from a large bronchial tube. This apparently was the means of exit for the blood which was poured into the cavity. The coagula, which filled all these smaller cavities, as well as the larger, were accidentally removed while searching for the seat of the lesion. The walls of the aneurism are firm and strong; they have not that appearance which Rokitsansky records in speaking of such cases—namely, of being soaked with the contents of the cavity, becoming macerated, jelly-like, and soft, until they finally burst into the cavity. On the contrary, the walls seem to be somewhat thicker than normal, and of greater consistence. This seems to be a very common occurrence, especially in the earlier stages of the formation of an aneurism, as may be readily seen by referring to cases of this kind which have been recorded. In the most complete monograph on this subject which we possess,* Dr. Rasmussen accounts for this remarkable condition of the walls of the aneurism by saying that it is due to a compensating hypertrophy of ‘the coats of the vessel, especially of the muscular coat, and not in a development of connective tissue, such as takes place in the wall of a cavity.’ That this hyper-

* *Edin. Med. Journal.* Vol. XIV. 1868. Part I. P. 399. Translation from the Danish by W. D. Moore M.D., *Dubl. et Cantab.*



trophied coat becomes friable and finally gives way is due to fatty degeneration of the normal elements of the artery. Dr. Powell,^a who has tabulated several cases of pulmonary aneurism, cannot refer this thickening of the walls merely to compensating hypertrophy, though no doubt this plays an important part in the process, but he attributes it also to an inflammatory change set up by the increased strain to which the vessel is subjected. "A microscopic section," he says, "taken from a specimen in an early stage, also shows a commingling of new connective tissue elements, causing induration affecting the whole thickness of the wall, and obscuring the distinction between the coats." The immediate causes of the formation of an aneurism seem to be two-fold. In the first place, when a vessel running in close proximity to a cavity becomes exposed at some point, it loses at this point its wonted support, and the internal pressure causes it gradually to yield. Secondly, the intra-vascular pressure is greatly increased. This, as Rasmussen pointed out, may be dependent on a variety of causes. There is an increased determination of blood to the lungs, especially during a fit of coughing; many vessels are obliterated in the condensed pulmonary tissue, and, moreover, it frequently happens that the vessel, after it leaves the aneurism, which is situated upon it, becomes greatly contracted, or may be completely lost in the condensed surrounding tissue. The loss of elasticity, and the degeneration which would necessarily follow if inflammatory changes existed in the coats of the vessels, would materially assist in the gradual distension of the wall at the point affected, and this would become thinner as it expanded. The specimen laid before this Society by Professor Bennett^b well exemplifies these remarks:—"The part of the sac connected to the vessel was its thickest portion, and from this the walls thinned away to the seat of rupture, a little to one side of the most prominent part of the tumour. The walls, though so thin, were stiff, and retained their form unaltered even after section."—*January 8, 1876.*

Croup.—DR. CORLEY said: The specimen which I have the honour of laying before the Society is important in a surgical point of view, but I shall confine myself to its pathological aspects. The child from whom this larynx was taken was admitted into Jervis-street Hospital last session suffering from true croup. Its history was the usual one in such cases. It had caught cold some days before, and at the time of its admission had a cough of the usual "barking" character. On examination there was well-marked stridor from above, with the characteristic cough and dyspnoea. The child was submitted to one of the recognised modes of medical treatment, and the next morning was placed in the hands of Dr. Kane, now of San Francisco, then Surgeon

^a London Patholog. Trans. Vol. XXII. 1871. P. 41.

^b Patholog. Society's Proceedings. 1871. Vol. IV. P. 266.

to the Hospital. He left the specimen with me for exhibition. I saw the child in consultation with him at once. It was then suffering from stridor to a remarkable extent with cough. There was much dyspnoea, but on percussion of the chest there was good resonance, and lung symptoms were almost absent. A second consultation was called for at four o'clock that day, and as it then appeared that the treatment had not effected a mitigation of the symptoms the propriety of an operation was considered. The chest was still tolerably clear, but the difficulty of breathing was becoming more intense, the lips blue, and the patient was almost insensible. As Dr. Kane entertained the more advanced views on the subject, now held by most English, Scotch, and foreign authorities, he proposed to operate. In this his colleagues, who were present, concurred, and the matter being submitted to the mother she asked would the operation cure the child. Of course we were obliged to tell her that it would not, but that it would prevent its dying of suffocation and give it a chance. She refused her consent, and the child died in six hours afterwards. On a *post mortem* examination we found the larynx which you see here.

There was this small membrane or septum commencing in front at the junction of the two vocal cords, spreading backwards along their edges, and as far as their termination and cleft at its posterior end about half way forward. It does not extend upwards or downwards, and is a false membranous septum, on a level with the rima, complete in front and cleft behind. The remaining parts of the larynx, trachea, and bronchial tubes were healthy; perhaps a little congested, but nothing more. The child died from suffocation, produced by the presence of the tough, adherent structure. The case affords a strong illustration of the value an operation would have possessed as a means of preventing suffocation in this case of croup, and it would have averted premature death unquestionably.—*January 8, 1876.*

Intestinal Lesions in Enteric Fever.—DR. JAMES LITTLE said: The gradual commencement of enteric fever is so much the rule that considerable value is attached to the insidious onset of that disease in a diagnostic point of view. But this is not without some striking exceptions, as was well illustrated in a case which I showed here a few meetings ago. The specimen I now present serves also to illustrate very well how occasionally enteric fever begins with great abruptness. These are the parts from the body of a young woman who was at a ball on the 31st of December. On the 2nd of January she was taken ill with a sore throat and vomiting. She was admitted into the hospital on the 6th of January and died on the 9th, so that her death took place on the eighth day of her illness. We could get very little history, indeed, of the symptoms which she presented before she was admitted into the hospital as her husband had been out at work, and she had been left in the room by

herself. When she was admitted she was unable to move a finger; she lay gathered up in bed perfectly prostrate. She was unable to speak or put out her tongue, but she readily swallowed any liquid that was given to her. A quantity of dark brown—exceedingly offensive—fæculent matter was continually squirted from her bowels, so much so that she was always, in spite of every care, lying in wet. The nurse was of opinion, when she had been a short time in the hospital, that she also discharged urine; but on adopting the precaution which should invariably suggest itself to those who stand by the bedside of a fever patient of examining the region over the bladder that viscus was found to be full, and on a catheter being introduced 50 ounces of highly-coloured and slightly albuminous urine escaped. The woman never rallied from this condition, and died in a little more than forty-eight hours after, on the third day after her admission to the hospital. The intestines present most characteristically, and in a very aggravated form, the appearances seen in cases of enteric fever. The last eight feet of the small intestine, and the first two feet of the large intestine, present marked appearances. The solitary glands of both are swollen and prominent, some of them the size of split peas, and others not so large. Several of the summits have given way; and very small sloughs are to be found in some, and very small ulcers in others. Altogether the appearance of the solitary glands, when the parts were first removed, was very like that seen in the skin in cases of small-pox, when the eruption has become pustular. Peyer's patches were very much affected, and, as is usually the case, the two patches in immediate proximity to the ileo-cæcal valve were principally affected. They form a large fungous-looking ulcer, the summits of the fungous masses being tipped with yellowish fæcal matter. The spleen is somewhat softened and the mesenteric glands swollen, succulent and breaking down readily between the fingers. There was no eruption, and the temperature presented nothing that was very characteristic. Of course the case had not reached that period of enteric fever when very characteristic temperature is shown. On one of the two evenings that she was in hospital the temperature was 103.5° , and on the other 104.6° ; and in the morning it was about a degree and a half lower. The points of interest in the case besides the appearance, which are very characteristic, are the abruptness of the onset and the great severity of the symptoms from the very commencement.—*January 15, 1876.*

Intussusception in a Dog.—DR. A. W. FOOT exhibited a portion of the intestines of a St. Bernard dog which had died from intussusception of the termination of the ileum into the ascending colon. The animal was a fine specimen of its breed, had obtained a prize at a dog show, and was about nine months old. During convalescence from an attack of distemper the animal indulged its keen appetite by eating the entire of a

large spiced round of beef. An attack of jaundice was the result. A "dog-doctor" prescribed a combination of aloes, scammony, and jalap, which produced one small evacuation, followed by tenesmus and a discharge of blood. These symptoms were aggravated by a repetition of the prescription, and in three days the dog died. The jaundice was very intense, exhibiting itself in the eyes, nails, and gums, and in the groins and axillæ. At the *post mortem* examination the slight amount of peritonitis present was remarkable; the intussuscepted portion of intestine was about twelve inches in length; there were very little preparations for adhesion between the serous surfaces of the invaginated portions. In a specimen of intussusception in a dog about ten months old, shown by Mr. Jonathan Hutchinson at the London Pathological Society,* the limited amount of peritonitis was remarkable. In the latter case the ileum and cæcum had passed into the colon for a distance of about eight inches until the cæcum nearly presented at the anus. The dog had been eight days ill, yet there was no trace of inflammatory effusion anywhere. For two days before his death he was intensely jaundiced. In reference to the non-occurrence of adhesions between the layers of impacted intestine, Mr. Hutchinson remarks that it must be borne in mind that experiments have established the fact that dogs are but little prone to peritonitis.—*January 15, 1876.*

Impacted Extra-Capsular Fracture of Cervix Femoris.—DR. F. W. WARREN said: The morbid specimen which I have the honour of laying before the Society is an example of impacted extra-capsular fracture of the neck of the thigh-bone, with perfect osseous union. It possesses some extremely interesting features, which, I think, render it worthy of being brought under the notice of the Society. The specimen was taken from the body of a male subject in the dissecting-room of Steevens' Hospital. I, therefore, regret that I possess no life-history of the specimen, or details of the nature of the injury, other than the anatomical and pathological appearances observed subsequent to death. The man was apparently about sixty years of age, and greatly emaciated; in the recent state, prior to any dissection being made, the left lower extremity was permanently everted and shortened to the extent of two and a half inches; the area of motion existing in the hip-joint was limited, particularly the motions of extension and adduction; at a certain point flexion of the limb was suddenly arrested, while rotation and abduction were comparatively free; thus within the area of limited motion the movements of the limb were quite free. On examination, a large long mass could be distinctly felt projecting posteriorly to the joint; a second irregular sharp mass of bone could be felt in front, below Poupart's ligament. The right lower extremity was fixed in a semi-flexed position at the knee-joint, the knee

* *Trans.* Vol. XXVI., p. 249. 1875.

being also directed across the opposite limb, as if to compensate for the extreme shortening of the injured side. The upper extremity of the right clavicle was in a state of caries, a large ulcer existing in the soft tissues over the bone. A large abscess was discovered beneath the right clavicle, in the sheath of the subclavius muscle. There were chronic ulcers on the legs, and cicatrices corresponding to others which had healed. The heart was fatty, and the liver and kidneys in an advanced state of amyloid degeneration. With the kind assistance of my colleague, Dr. Bookey, I made a very careful dissection of the left hip-joint; the glutæi muscles were in a state of atrophy, the glutæus minimus being attenuated almost to a fascia; the external rotators of the joint were perfectly normal and healthy, and even seemed to be somewhat hypertrophied, the pyriformis being unusually well developed. On removing the muscles, we found a large long mass almost obscuring the joint in front and behind—so much so, that we first thought that these osseous projections must be the result of chronic rheumatic arthritis; on cutting the capsular ligament (which was quite healthy), however, this opinion was quickly dispelled, for the cartilaginous head of the femur was perfectly smooth and quite healthy; the acetabulum was also perfectly healthy and free from disease. The ligamentum teres was intact and normal. The remarkable external features of the specimen on the table are as follows:—Viewed from behind, the neck of the bone is completely obscured by this long large mass, which is the great trochanter, the cartilaginous head of the bone being alone visible; a prominent osseous ridge of new bone is seen running upwards and outwards along the posterior intertrochanteric line, commencing below the trochanter major, and terminating above in a conical projection, which surrounds the shaft of the femur, and is in the direction of its longitudinal axis. The summit of the trochanter major is above the level of the head of the femur, and is separated from this conical projection by a distinct and deep depression. Looking at the specimen from its anterior aspect, the neck is observed at right angles to the shaft; along the anterior intertrochanteric line no osteophytic projections are visible, contrasting strongly with the enormous long outgrowths which form the cup-like cavity in which the head of the bone is set on the posterior and internal aspect. The second long mass, below and in front of the neck, springs from the lesser trochanter, and passing beneath the neck of the bone, is continuous with the lower part of the trochanter major, forming the osseous cup in which the head lies. Viewed from above, it presents an appearance similar to a ball in a cup. The trochanter major has been carried backwards and inwards, probably by the action of the glutæi muscles. This large long mass, which surmounts the shaft and the ridge of bone, corresponding to the posterior intertrochanteric line, seems to be an ossifically united fracture, passing through the great trochanter, and detaching it from the shaft.

The linea aspera faces in the same direction as the head of the bone, running down the internal aspect of the femur, the shaft having been rotated outwards on its longitudinal axis. The enormous bony buttresses explain the limited area of motion which existed in the joint, for upon placing the head of the bone in the acetabulum we observe that extension is prevented by this mass of bone behind impinging on the dorsum ilii, above the acetabulum; and flexion is arrested by this anterior projection hitching against the anterior inferior spine of the ilium; the other motions of the joint are also limited from the same cause. What probably occurred was this—the neck of the bone was broken at its junction with the shaft, and driven into the cancellated tissue between the trochanters in an oblique direction, the broken extremity of the cervix being forcibly impelled against the trochanter major, and completely detaching it from the shaft, the lesser trochanter being probably also fractured. The perfect ossific union, the exuberant osteophytic growths, coupled with the extreme density and weight of the bone, evidently point to a fracture occurring at a very early period of the patient's life, he being at the time in robust and vigorous health, for it is hardly credible that such perfect consolidation could have taken place under any other conditions.

Here is a somewhat analogous specimen from the Museum of Steevens' Hospital, in which no union has taken place, the trochanter major being completely detached, and the neck firmly impacted into the upper end of the shaft. On referring to some of the leading authorities on this subject, I find an analogous case in the late Professor Smith's book on "Fractures and Dislocations," page 93, Case 41, in which similar osteophytic growths are thrown out in the line of solution of continuity in the bone—nothing like, however, in so marked a degree as in the specimen on the table. The anterior intertrochanteric line also in this case was the seat of these growths, contrasting strongly with the specimen in which the anterior intertrochanteric line is perfectly free from them.—*January 15, 1876.*

Diffuse Caseation of the Lungs, subsequent to Hemorrhagic Pleural Effusion.—DR. A. W. FOOT exhibited the lungs of a man of about twenty-seven years of age who had been under his observation, more or less, for twenty months. He had first come under Dr. Foot's care in April, 1874, on account of a copious effusion in the left side of the chest, of which the signs and symptoms were well marked, and which was attributed to cold caught out of a severe wetting a month previous. He considered himself to be a healthy man; two years before he had had a cold on the chest. On the 18th April Dr. Foot tapped him two inches beneath the apex of the left scapula, and drew off twenty-five ounces of a bloody fluid, sp. gr. 1022. Rasmussen's aspirator was used; the microscope

showed innumerable blood corpuscles in the fluid withdrawn. He was greatly relieved by the operation, and said a load of three men "had been removed from his chest." On the 29th April the chest was again tapped in the same situation, and forty-five ounces of bloody fluid, sp. gr. 1020, removed with the same instrument as before. On the 12th May, 1874, he was a third time tapped, and eighty-nine ounces of fluid like claret, similar to that procured on the former occasions, was withdrawn, sp. gr. 1028. The nature of the fluid suggested the view that the case might be one of hæmorrhagic sarcoma of the pleura similar to that laid before the Society by Dr. Gordon, 28th February, 1874. ("Proceedings Pathological Society, Dublin," new series, Vol. VI., p. 35, 1875). The existence of one enlarged gland in the left axilla and a distension of the left thoracica-longa vein did not oppose this view. However, he improved greatly after the third operation; respiration and vocal fremitus returned over the left front, but the breath sounds remained distant and muffled over the left back, over the inferior part of which percussion was dull and vocal fremitus deficient; these physical signs were unaltered when the patient was placed on his hands and knees, and were attributed to the thickened pleuræ and the residua of the hæmorrhagic exudation. After a stay of eighteen weeks he left hospital. Three weeks after an extensive series of enlarged lymphatic glands presented themselves at either side of the neck, and there were signs of deposit in the right apex. He now spent thirteen months in the county Wicklow, but on his return from thence presented signs of rapidly progressive phthisis, of which he died on 14th January, 1876. When the body was opened the left lung was found of the same size as the right one; it had, therefore, re-expanded after the removal of the fluid; both were large, rigid, and solidified, with caseous pneumonia in various stages of degeneration, presenting all the different appearances of phthisical lungs—the diffuse caseation (tubercular infiltration of Laennec), isolated cheesy foci (crude tubercles), and the pseudo-tubercular granulations, resulting from cross-section of stuffed bronchioles. No miliary tubercle was discoverable in the chest or elsewhere. The left lung was adherent to the chest except at the inferior part of the antero-lateral region, where there was a pocket-shaped cavity about the size of the hand, lined with shaggy villous lymph. This Dr. Foot considered to be the cavity which had originally contained the sanguineous exudation, reduced in size by subsequent contraction; and he regarded the source of the hæmorrhage to have been the fragile vessels in course of development in the recent exudation while undergoing organisation. There were no evidences of hæmophilia or of purpuric tendency in the patient. A large glass jar, full of the fluid removed, was exhibited; it was of a deep blood red colour, and perfectly opaque to the strongest light.—*January 15, 1876.*

Acute Miliary Tuberculosis.—DR. FINNY said: These morbid specimens, which I desire to bring under the notice of the Society, were taken from the body of a boy aged seventeen years, who was admitted into the City of Dublin Hospital on the 6th of this month, labouring, it was supposed, under typhoid fever, and who died on the 12th. He had been ill, it was stated, for a fortnight before his admission, and had been lying in bed for a week. He was of temperate habits, and seemed well grown and developed, but further than this we could obtain no information about him. On his admission his state was as follows:—Pulse 104, temperature 102°, respiration normal, eyes clear, pupils dilated, and cheeks flushed. This flushing was observed to come on from five to seven o'clock on the evening of each day. His tongue was slightly coated, but clean at the tip, and his bowels were confined. He felt slight pain on pressure at the right iliac region, but there was no gurgling, and the area of splenic dullness was defined, but not increased. He had frontal headache, and complained of a feeling of nausea, and frequently called for a basin, as if his stomach were about to be sick, and he fancied that if it were so he would get relieved from the symptoms. No vomiting, however, occurred at any time during his stay in hospital. His lungs and heart were examined, and found to be free from abnormal signs. No eruption was to be seen on the body. Owing to the meagre history we had of the case, and to the fact of enteric fever not uncommonly being accompanied in the beginning with constipation, while the characteristic eruption may be delayed for many days, or entirely wanting, it might easily be thought to be a case of enteric fever, the only feature wanting being the increased splenic dullness. After three days the symptoms remained much the same, without any marked exacerbations, the temperature ranging—in the morning, 101°, and in the evening, 102°. There were, however, marked symptoms of nervous depression, the headache continued, and “busy” delirium set in. His bowels were moved by an oil draught, but there was no diarrhoea nor evidences of tympanitic distension. On the morning of the 11th, the day preceding his death, his forehead was found bathed in profuse perspiration, and the delirium was more marked. He answered questions when they were put to him, but afterwards relapsed into a state of typhomania. Towards evening his symptoms became more severe. The next day his respiration was noticed to be unrhythmical, although not very fast, being only 28 in a minute; his breath was unequally drawn, and was held for a considerable time, and on one occasion so long was it retained that the nurse thought that he was suffocating. He had no cough, nor had he had any during the whole time that he was under my observation. The pupils of his eyes were widely dilated, and did not respond to light; his face was deeply flushed; there were floccitation, carphology, and restless movements, and “cerebral maculæ” (Trousseau) were developed on the

slightest scratch with the nail, or on drawing a pencil along the skin. His temperature, which the evening before was 102° , rose on the day of his death to 104.5° at two o'clock, and to 105.9° shortly before his death, which occurred at six o'clock. His lungs were again examined that day, but did not exhibit either dulness or muco-crepitating râles. The respiratory sounds were harsh and loud. While his head was being shaved, convulsions ensued, with much lividity of face, and when these passed away he became more unconscious, refusing his medicine, and spitting it out. About noon on the 12th, loud muco-crepitating râles developed themselves, and his breathing became noisy and loud, and for two hours afterwards he foamed at the mouth, which continued until he died. His face and whole body, but his neck and hands chiefly, became deeply congested, of a pronounced cyanotic tint. At the autopsy, made by my clinical clerk, fourteen hours after death, the brain was removed, and during the removal a teacupful of serum exuded. I then had the lungs and intestines removed, and the following was the result of the investigation:—The intestines were perfectly free from ulceration; Peyer's patches are here seen, and are quite free from all ulcerative changes; the spleen was very slightly enlarged, and the mesentery showed no appearance of tubercular disease; the lungs were deeply gorged with black blood, particularly behind, while the pleura pulmonalis, on the surface of and between the lobes of the lung, was thickly covered with very small granular bodies, which, when fresh, were of a grey colour. On making a section of the lung, it was found to be full of small nodules, or tubercles, more easily felt than seen, and some of them of a yellow colour. The bronchial mucous membrane was deeply congested, and of a cinnabar red colour. The heart was healthy. The brain presented along the edge of the posterior lobe several spots of yellowish matter, but altogether very little yellow matter was seen in the fissures of Silvius, or at the base of the brain. The surface of the brain was covered in some places with small nodules, similar to those on the pleura. On making a section of the brain, the central portion of it was found to be greatly disorganised. The septum lucidum and anterior pillars of the fornix were utterly destroyed, and softened down to a white flocculent matter.

The points of interest in this case are both clinical and pathological—pathologically, in that acute tuberculosis should run its course in so short a time as three weeks in a lad of seventeen, who was well nourished, and free from scrofulous tumours and ulcerations, or previous tubercular disease, and that so little morbid change should produce so fatal a disease. Clinically the case is interesting, as being one of those which so closely resembles enteric fever as to make the diagnosis between the fever of acute tubercular disease and enteric fever a matter of no little difficulty. Again, the case was remarkable from the absence of the

symptoms and signs one generally looks for in acute tuberculosis of the brain and lungs—such as the frequent exacerbations of temperature, the sweating, the vomiting, the intolerance of light and sound, the hacking cough, the dilatation of *alæ nasi*, the dyspnoea and rapid breathing, the frothy expectoration, and the physical signs of general irritation in the smaller bronchial tubes. The *rationale* of the rapid termination of the case in death appears to be as follows:—The altered character and inflammatory changes of the lymphatic tissues in the “perivascular canals of His,” in the shape of miliary tubercles, caused such an obstruction to the flow of blood in the smaller vessels of the pia mater as to induce a filtration of serum into the arachnoid spaces.

When this effusion exceeded the powers of absorption, the pressure on the veins leaving the skull still further retarded the circulation. That on the morning of the day of his death this pressure extended to the fourth ventricle, and as the result of engagement of the sympathetic centre and the origin of the vagi, convulsions ensued, the respiration became altered, and death by asphyxia was produced, accompanied by the usual rapid outpourings of serum into the bronchial tubes.—*January 22, 1876.*

Congenital Malformation of the Hand.—MR. F. T. PORTER said: The subject of malformations and deformities is interesting, whether we view it in relation to its surgical bearings or in relation to questions bearing on relations of human to comparative anatomy. This is a cast of the right hand of a female subject somewhat over thirty years of age, whose body was dissected in the Ledwich School. This right hand has seven metacarpal bones, and first one phalanx is attached to one metacarpal bone, and then to the next metacarpal bone there are two and three phalanges.

The other hand was much the same, with the exception that on the first metacarpal bone there were no phalanges, and on the next two digits with three phalanges to each. There are some other points about the case. The first and second toe, and the third and fourth toe of the left foot were webbed together in their entire length. The right femur was dislocated on the dorsum of the ilium. I am not going to enter into the treatment of these affections or cases. I leave that to specialists who have written a good deal on the subject. But two erroneous observations have been made in the books which I cannot neglect to notice. One is that supernumerary fingers and thumbs are not muscular—that, in fact, they have no muscles attached to them; and the other is that supernumerary fingers always grow out of the sides of other fingers. Here the supernumerary finger and thumb are attached to the metacarpal bone. I have before heard of cases of six fingers, but I think this case, in which there are seven, is of peculiar interest.—*January 22, 1876.*

Fracture of the Trochanter Major.—DR. F. W. WARREN: The specimen which I have the honour of submitting to the Society is an example of that extremely rare injury, fracture of the great trochanter, without any fracture of the cervix femoris. It was taken from the body of a male subject, in the dissecting room of Steevens' Hospital, apparently about fifty years of age, and of extremely muscular build. No history of the case could be obtained. In the undissected state nothing unusual in the attitude of the limb was observed, its length and position being perfectly normal. The appearances presented by the specimen are as follows:—Through the base of the trochanter major there is a distinct fracture passing obliquely downwards and backwards, the detached trochanter being drawn upwards and inwards so that its summit projects above the level of the head of the femur. The tendinous expansions which cover the process are intact. Owing to the detached fragment being drawn upwards by the action of the muscles, the lower part of the fractured surface of the femur corresponding to the original site occupied by the trochanter is exposed, and, by passing the finger over it, presents to the touch a rough sensation. The detached trochanter is firmly connected to the shaft by dense ligamentous tissue, and into its apex is inserted the *glutæus medius*, the *glutæus minimus* being attached along its antero-lateral margin. When compared with a bone prior to the union of the trochanter to the shaft through its epiphysary line, the fracture is found to take a direction exactly corresponding to the epiphysary line. On comparing the specimen with the opposite healthy femur, the fractured surface of bone corresponding to the original site of the detached trochanter presents an obliquely flattened surface exactly corresponding to the epiphysary plane, and which, when traced upwards, is directly continuous with the upper part of the neck of the thigh bone. There are no osteophytic growths of any kind. The hip-joint is perfectly healthy, and there is not the slightest appearance of any recent injury or violence. The rarity of this injury may be inferred from the fact that Professor Hamilton, of New York, in his work on "Fractures and Dislocations," states that, so far as he knows, "the only well-authenticated example of this accident is the one reported by Mr. Key to Sir A. Cooper," in which the fracture traversed the epiphysary line in a girl, and was produced by direct violence; however, in *The London Medical Record* of Jan. 15th, 1876, there is a case of this injury recorded by Dr. Roddick, Professor of Surgery in McGill University, Canada; the case is copied from *The Canada Surgical and Medical Journal*, and occurred in a boy, also through the epiphysary line, being the result of muscular action. Professor Bennett informs me that there are three examples of this fracture in the Museum of Trinity College, Dublin. I think that in this case the fracture occurred through the epiphysary line between the ages of four and eighteen years, prior to union of the epiphysis with the

shaft, which takes place at the eighteenth year. I have been led to form this opinion—firstly, from the absence of any appearance of recent injury, the accident occurring at a remote period; secondly, the line of fracture exactly corresponds to the epiphysary line as observed in a healthy bone prior to union of the trochanter major to the shaft; and thirdly, in the two recorded cases the fracture was epiphysary. On making a section of the specimen the neck of the bone is seen to be perfectly healthy, there being no appearance whatever of any fracture implicating the cervix femoris.—*January 22, 1876.*

Epithelioma of the Oesophagus.—DR. KENDAL FRANKS said: The specimen which I have the honour to lay before the Society was removed from the body of a man who died in the Meath Hospital on January 24th. He was admitted to the hospital on the 16th of December, under the care of Mr. Smyly, who has kindly allowed me to exhibit this specimen. He was forty years of age, 5 feet 6 inches in height, and of a dark, sallow complexion. By occupation he was a ship's carpenter. He was somewhat emaciated, but had no well-marked cachexia. The glands in the neck were not enlarged. He stated that he had been suffering for about a year. The immediate symptoms from which he sought relief were loss of voice and great difficulty in swallowing. He could not speak much above a whisper, the voice resembling that of laryngeal phthisis. The dysphagia was so great that he could not swallow any solid food. Liquids he could, by a series of gulphs, and after much straining, get past the obstruction. Shortly after his admission into hospital, Mr. Smyly made a laryngoscopic examination. The appearance of both vocal chords he found to be healthy, as was also the region of the larynx above them. On attempting to articulate, the left vocal chord was seen to remain stationary, whilst the right one moved quite freely. This, Mr. Smyly supposed, was due to the presence of a tumour or abscess pressing upon, and interfering with, the left recurrent laryngeal nerve. As the man had suffered from inflammation of the lungs five years previously, Dr. J. W. Moore made an examination of his chest, and has kindly furnished me with the following report:—

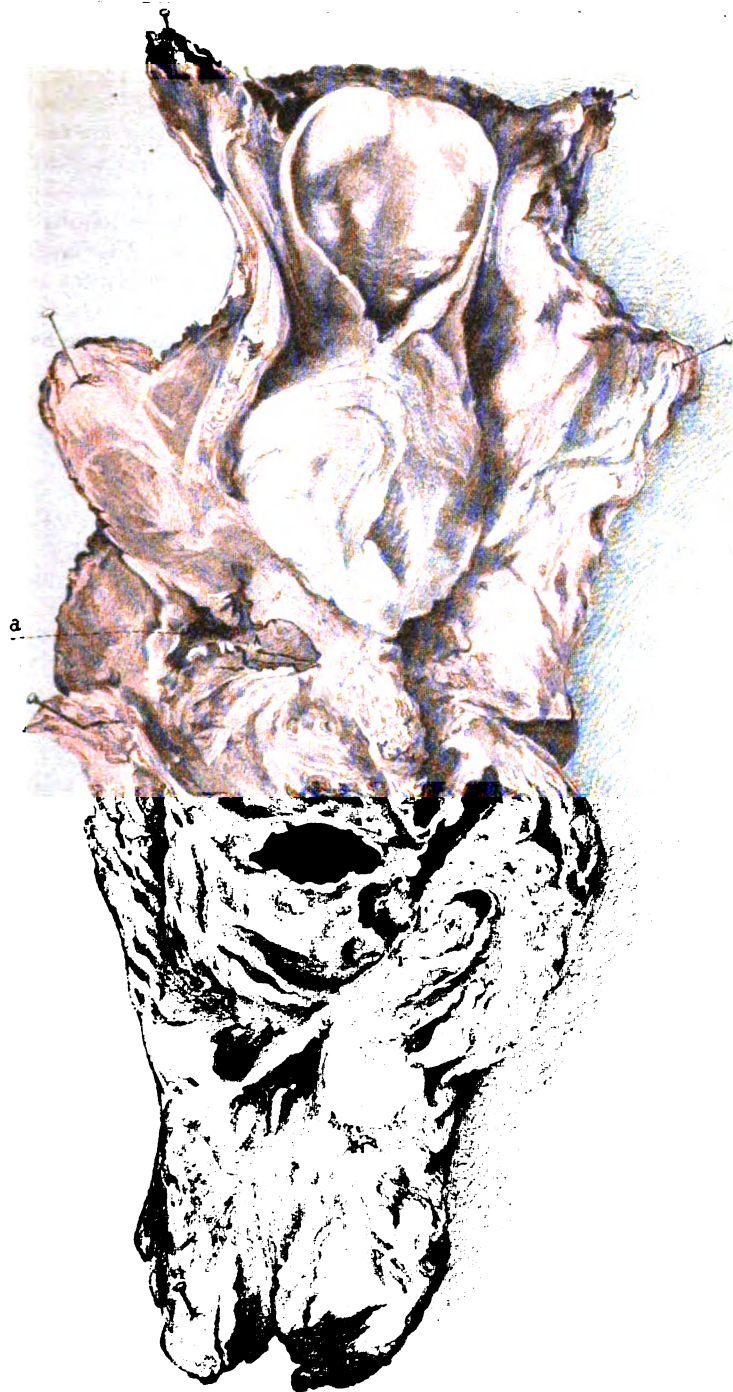
“Pulse, 54; temperature (in axilla), 96.9°; respiration rapid. Inspection showed that expansion was greatly diminished on the right side of the chest, especially over the apex of the right lung. It was normal on the left side. Percussion revealed the presence of marked myoidema on the right side of the chest. There was comparative dulness along the right clavicle, in the sub-clavicular, supra-spinous and infra-spinous regions. In the posterior regions named the percussion note was remarkably wooden in character. Auscultation revealed almost complete absence of vesicular breathing over the upper lobe of the right lung, the respiratory sound being very rough and ‘dry.’ No crepitus. Over

the sterno-clavicular articulation a slight 'whistling' stridor from above. I could detect no evidences of disease in the left lung."

From these physical signs, Dr. Moore concluded that there was fibroid induration of the upper lobe of the right lung. On Jan. 7 complete dysphagia came on. Whenever he made the least attempt at swallowing, even a small quantity of liquid, it brought on violent coughing, and the fluid was immediately returned. He was accordingly fed for a few days per rectum with nutrient enemata of beef-tea and brandy. In a few days, after a violent fit of coughing, a copious discharge of thick pus took place, after which the power of swallowing liquids returned to a slight degree, even a small quantity of this latter requiring great exertion. Again, on the 16th he became absolutely unable to swallow anything; but again in a few days the symptoms became less urgent, after a fresh discharge of a purulent fluid. Thus partial and complete dysphagia alternated at short intervals until the day of his death, recourse being had to nutritive enemata whenever the latter supervened. On the 21st inst. he was seized with great pain in the left side and in the diaphragmatic region. The breathing became very short and rapid, each inspiration causing intense agony. In short, he had all the symptoms of acute pleuritis on the left side. These symptoms proved unamenable to treatment, and he died on the 24th of January. A *post mortem* was made about eight hours subsequently. Rigor mortis was very badly defined, but hypostatic congestion was well marked. The body was slightly emaciated. On opening the thorax the lungs were found uncollapsed. That on the right side was firmly adherent to the parietes all over. The pleura was very much thickened, and fibroid change existed in the lung tissue. In endeavouring to remove it pieces of the lung were left attached to the diaphragm and to the chest walls. The lower part of this lung had a dark red appearance, was very soft under pressure, readily yielding under the finger and much resembling the tissue of spleen, apparently the result of collateral cedema. On section the upper lobe was found infiltrated with pus, the consolidated lung tissue evidently undergoing purulent degeneration. The left lung was thickly covered all over with recent lymph, bands of which stretched from lobe to lobe, and from the lung to the parietes, some binding it to the pericardium. The left pleural cavity was a little more than one quarter full of fluid. When the œsophagus and trachea were divided and turned up, a large opening, two centimetres long and two broad (in one part nearly three centimetres broad), was found, leading from the œsophagus into the cellular tissue immediately in front of the spinal column. There was no pus, and no discoloration of this prevertebral tissue, and no undermining. However, when the œsophagus was raised, a dark fluid, like coffee-grounds suspended in water, escaped from the œsophageal opening. On passing the little finger up into the œsophagus from below, a narrowing of the passage was felt

just beneath the opening, which prevented the finger from passing further upwards. The œsophagus being slit up, its interior was found to be the seat of extensive ulceration. This began about 3·5 centimetres below the opening of the larynx, and extended downwards for a distance of 7·75 centimetres. In some places the ulceration had excavated deeply. This was most remarkable on each side of the larynx, adjoining to and below the thyroid cartilage, especially on the left side. This erosion, by implicating the left recurrent laryngeal nerve, was probably the cause of the paralysis of the muscles moving the left vocal cord. On this side, over the region of the cricoid cartilage, the mucous membrane has been entirely eaten away, exposing the cartilage itself, which is seen to be in a state of necrosis (see Plate, A). On the anterior wall of the œsophagus another remarkable perforation is seen, situated $8\frac{1}{2}$ centimetres below the upper margin of the ulceration. It measures 8 millimetres in the vertical direction, and 1·75 centimetres in the transverse. This opening forms a direct communication between the œsophagus and the larynx. Its margins are irregular, thickened, and indurated. Sections of the mucous membrane, where it is undergoing this ulcerative process, show that this is a true epithelioma of the œsophagus. The accompanying drawing, which was made while the parts retained their original appearance and colour, shows the well-defined line of demarcation where the healthy mucous membrane adjoins that which has undergone this change.—*January 29, 1876.*

Rupture of the Uterus.—DR. ATTHILL said: This is a specimen of rupture of the uterus. The patient from whose body it was taken died in the Rotunda Hospital a few days ago. Her case was interesting. She was very much deformed, having been the subject of Pott's disease, which had, at an early period of her life, affected the lower portion of the lumbar vertebræ. The result was that the abdomen was very prominent and the uterus tilted very much forward, but there was not, as was proved on the *post mortem*, any actual narrowing of the brim of the pelvis. This woman was admitted some time on the night of the 8th January, and on the morning of the 9th labour was just commencing. It progressed very slowly, so much so that at two o'clock on the afternoon of the 9th the *os uteri* was not much larger than a shilling, and was rigid. At that hour the membranes ruptured of their own accord. She was treated with warm baths, and small doses of chloral were administered with the hope of inducing relaxation of the very rigid *os*. She slept a good deal from the effects of the chloral, thirty or forty grains of which were administered in ten grain doses at intervals; her pains were regular, and by no means remarkably strong. She complained a good deal of pain, as women usually do, but there was nothing remarkable in this symptom. At four o'clock on the morning of the 10th she was examined,



the os being then two-thirds dilated. There was nothing remarkable about the case, except the extreme slowness with which the os dilated; her pulse was quiet, and no symptom indicated that anything was wrong. Shortly after the pupil on duty remarked that she had become faint and feeble, and Dr. Macan on being sent for found her in a state of collapse. The forceps was applied, the os being then two thirds dilated; and she was delivered of a dead child; the woman herself sank and died after the lapse of a few hours; there was no hæmorrhage. On a *post mortem* examination a rent was found which involved the posterior and lower segments of the uterus, and extended from very near the os to the body of the uterus. The remarkable feature of the case is that the rupture should have occurred while the os was still but two-thirds dilated, and without any extreme action or pain being suffered by the patient. That she should have lived for some hours afterwards is easily explained by the seat of the rupture. Some of these cases of rupture, in which the cervix alone is involved, recover. In this case there was no hæmorrhage into the pelvis, or externally *per vaginam*. My impression of the case is that it was very much due to friction against the projecting angle of the vertebræ caused by the pressure of the child's head upon the cervix, there being no waters to intervene and save the cervix; and that this pressure produced a thinning of the cervix, which gave way under some perhaps rather stronger uterine action than had previously taken place. It was her first child.—*January 29, 1876.*

Diffuse Peritonitis; Osteo-myelitis; Pyæmia.—DR. E. W. COLLINS, in submitting sections of the tibia and fibula, said: The specimens I exhibit to the Society are good examples of diffuse inflammation attacking the various structures of the bone and rapidly terminating life by pyæmia. Their pathological history accords with that of several of the cases so graphically depicted by the late Dr. Ephraim M'Dowel.

A delicate-looking boy, ten years of age, sustained an injury of his foot, from which, apparently, no harm resulted, on Monday, Jan. 3, exactly a week prior to his admission to hospital. On the following Thursday, having again hurt his left foot while attending a public ceremonial, he came home limping. That night he was seized with rigors, was feverish, restless, and rambled in his sleep. Similar febrile symptoms manifested themselves each succeeding night. On Saturday swelling commenced about the ankle and instep. By Sunday night the swelling had extended to his leg. Late on Monday evening he was taken to Jervis-street Hospital. When I saw him for the first time on Tuesday, the foot and leg, as far as the tibial tubercle, were red, swollen, tense, and exquisitely tender on pressure and on movement, especially over the tibial crest below the tubercle. The tongue was dry and brown; the pulse weak and rapid, 140; the temperature nearly 105°; the coun-

tenance pale and expressive of suffering; the strength considerably prostrated. Judging from these symptoms that I had to deal with a case of diffuse inflammation of the bone, as well as the periosteum, I expressed a most unfavourable opinion to the parents of the boy. The same day I divided the tissues freely over the tibia down to the bone for nearly three inches. The edges of the incision immediately retracted, and when the knife reached the periosteum a considerable quantity of thin reddish sero-purulent fluid gushed out. The limb was wrapped in a hot poultice, which was renewed every third hour. Quinine, iron, and iodide of potassium were administered internally. I do not purpose to enter into the daily history of the case. In brief, each night, though morphia was given with no sparing hand, he raved almost constantly, frequently keeping the other patients awake by his cries. The symptomatic fever continued high throughout, the temperature ranging between 103° and 105° , and attended with nocturnal rigors. The pulse became daily feebler, running between 140 and 160; the tongue became more brown and dry; the lips and gums covered with sordes; the countenance more anxious, sunken, and expressive of suffering. The strength rapidly gave way. The local signs varied in intensity. On the Thursday succeeding his admission, the tension, œdema, and redness over the inner malleolus and below it having considerably augmented, I deeply incised the tissues, but without giving exit to purulent matter. The following day some pus issued from the sides of this incision, and the tension in this situation subsided. Much pus was discharged daily from the upper tibial incision, with diminution of the swelling and tension of the calf of the leg. On Saturday further tension, redness, and swelling with fluctuation, had taken place over and below the outer malleolus. From the incision I then made, matter issued in considerable quantity with amendment of the local signs. Ere this time the edges of the former incisions had assumed a sloughy unhealthy character. On Monday, a week after his admission into hospital, the local signs had so far abated that the calf of the leg was flaccid, the former redness of the limb had subsided and been succeeded by pallor, and no fresh œdema or fluctuation was to be found. But the boy was manifestly sinking. The next day diarrhœa and dyspnœa set in, with tenderness of the joints of the upper extremity. He continued rapidly to sink, passed into a state of low muttering delirium, and died the following evening, Jan. 19, after a fortnight's illness.

At the autopsy the periosteum was found thickened and entirely stripped from the tibia below the tubercle. The tibia presented the macerated appearance it now displays, as it lay bathed in a thin purulent fluid with its lower epiphysis partially detached. Section of the bone through the centre of its shaft exhibits the phenomena of osteomyelitis. The medullary membrane and cancellated tissue show distinct foci of

inflammatory action in some places, while in other situations increased vascularity of the cancelli is alone apparent. Just below the tibial tubercle destruction of the compact tissue may be seen commencing. Underneath this spot there is purulent infiltration of the medullary tissue. In the lower extremity of the fibula the same process is commencing. The ankle and neighbouring tarsal joints were full of pus, without thickening or vascularity of the synovial membrane. There was extensive purulent infiltration of the muscular structures surrounding the bones of the leg, especially on their posterior aspect; and in some cases no communication existed between these depots and that next the bone. The pus presented a more healthy appearance in the intermuscular than in the subperiosteal infiltrations.

It is now twenty-seven years since some cases similar to the one I have detailed, but less rapidly fatal, were communicated to the Society by Drs. Hutton and M'Donnell (Vol. II., O.S., pp. 6, 38, 56). In the present instance, from the severity of the local and general manifestations, the rapid progress, and adynamic character of the disease, anything but a fatal termination could hardly have been expected. Indeed, such appears to be the rule. Timely and energetic treatment, following upon early recognition, even though it limit the local spread of the malady, too frequently fails to prevent the development of pyæmic complications, from which the patient more or less rapidly sinks.—*January 29, 1876.*

Epithelioma of the Œsophagus.—DR. BENNETT said: I exhibit this specimen because it illustrates two points of importance in reference to the disease already laid before the Society by Dr. Franks to-day—namely, malignant ulceration of the Œsophagus. In Dr. Franks' case the extent of the ulceration was extreme, with perforation of the anterior and posterior walls of the upper part of the Œsophagus. This specimen presents a condition of ulceration which is the reverse and a train of phenomena leading to a fatal issue by a route entirely different. The patient from whom it was removed was a woman, of about forty-five years of age, who was admitted on the 7th of December to Sir Patrick Dun's Hospital. She complained of difficulty of swallowing, from which she had failed to get any relief from medicine or otherwise, and which was so great as to prevent her from eating almost any solid food. She insisted that the cause of her trouble was a solid enlargement of the thyroid gland existing in the middle line anteriorly, involving chiefly the isthmus of the gland. This enlargement is caused by the presence of a cyst, such as is commonly seen in the gland of about the size of a small walnut, containing some glairy fluid and solid matter. The woman said that this tumour had been a trouble to her ever since she had grown up—a history based on symptoms which must have been

chiefly imaginary. She complained of pain in swallowing, which she referred to the region immediately behind the thyroid gland.

On examining the sides of the trachea and the thyroid it was possible to detect with the finger one or two bodies of suspicious hardness—lymphatic glands, as the dissection proves, implicated by the adjoining malignant disease. After her admission she took the benefit of rest in bed for some days in preference to any other treatment, and was extremely loath to be disturbed in any way. I delayed making a complete examination until it was possible to get her out of bed. As soon as she had sufficiently rallied to be able to get up and sit in the ward, I proceeded to make a more detailed examination. On giving her a fluid to swallow, it was evident, on watching the act, that at a very early stage of deglutition the obstruction occurred—almost, in fact, as the fluid left the mouth and before the termination of pharyngeal action. This fact, together with the existence of the suspicious glands outside the thyroid body in front, combined with the patient's age, made the diagnosis easy enough. It was hard, on the other hand, to see what relation existed between the small thyroid tumour in front and the obstruction in the œsophagus, which could most readily be attributed to the ordinary malignant stricture, while the enlarged and indurated lymphatic glands supported a very definite combination once the thyroid tumour was dismissed from consideration. I hesitated to use any œsophageal bougie to aid the diagnosis for many reasons, the principal being that on more than one occasion of the kind I have known the passing of a bougie to be followed by hæmorrhage, not immediately after the passing of the tube, but spontaneously in a few days afterwards; and had this occurred in the present case it certainly would have been most injurious. Believing, therefore, that very little good was to be expected from the use of a tube, on the supposition of the existence of malignant disease, I laid it aside. On the first opportunity afterwards I made a laryngeal examination; and this is the first instance in which I have been able to make a completely satisfactory diagnosis of malignant disease so low down in the pharynx by means of the laryngoscope. I made the examination by sunlight, and had no difficulty in determining what, indeed, I had already inferred—namely, that the epiglottis, which I had felt with my finger, and the sides of the upper part of the pharynx, were free from disease.

The vocal chords could be readily seen, and you could see that the trachea and larynx were healthy. But on looking beyond and behind the opening of the glottis, it was just possible to see behind the cricoid cartilage a thick, grey roll of tissue, just showing through the lower outlet of the pharynx. It is blanched now from the effect of the spirit in which it has been kept, and looks paler than when seen during life. It could be seen on both sides. Anyone who saw this roll of tissue in

its living condition, from the contrast of colour and the sudden projection of the border, would have recognised that it was the edging of an ulcer in a position high enough to come into sight, projecting into the pharynx through its lowest opening. Satisfied with this diagnosis, I made no attempt to interfere with the tumour. The case progressed—as it was inevitable that such a miserable one should—to a fatal issue. There was no intra-thoracic disease, and but a slight amount of stridor. After two days' occupation of her bed she died almost quite suddenly in the end of December, apparently of simple asthenia. The only parts of the body that I was able to examine, *post mortem*, are these I have here—the pharynx, larynx, thyroid gland, with the cervical parts of the trachea and œsophagus. The trivial disease of the thyroid gland may, as I have already pointed out, be dismissed as taking no share in the fatal disease, although it is easy to understand how it formed the basis of the latter in the patient's mind. The epithelioma of the œsophagus involves the entire circumference of its first portion, and measures, about an inch and a half in the length of the tube, its upper margin passing into the pharynx, where the characteristic raised and everted border came within the range of the laryngoscope. The surface of the ulcer is not eroded, as in Dr. Franks' case; on the contrary, it is, in great measure, covered with a whitish fissured outgrowth, which opens like the pile of coarse velvet as the tube is laid flat, and its tissue breaks and crumbles readily with any handling. In fact, it behaves so as to be aptly described by the term applied to this disease by Cruveilhier, "fragile cancer." The microscopic examination proves it to be an epithelioma, and different, as it appears at first sight to be, from that exhibited by Dr. Franks, I can find no difference of importance in the microscopic characters of the disease in the two cases. These cases differ then only in the amount of destruction and loss of the diseased tissue, and of the parts involved by it, and in the clinical details.

From the contrast my case presents to the other in the mode of death of the patient, and in the fact that the disease was capable of being diagnosed during life by a laryngeal examination, I thought the case worthy of being laid before the Society.—*January 29, 1876.*

PREVENTIVE TREATMENT OF BOILS.

DR. L. DUNCAN BULKLEY, the well-known dermatologist of New York, says that the hyposulphite of soda, given internally in doses of thirty grains, three or four times daily, largely diluted and on an empty stomach, is his main reliance in checking the new formation of boils. Sometimes this fails, in which case he recommends large and repeated doses of quinia.—*American Practitioner, May.*

TRANSACTIONS OF THE CORK MEDICO-CHIRURGICAL SOCIETY.

SESSION 1875-76.

President—DR. W. H. HOLMES.

Secretary—DR. RINGROSE ATKINS.

Notes of a Case of Excision of the Astragalus. By J. MAGILL, M.D., M.R.C.S.

MR. PRESIDENT AND GENTLEMEN,—Allow me very briefly to bring to your notice a case of compound dislocation and fracture of the astragalus, in the hope that the details may not be altogether devoid of interest.

The patient was a child aged three years, the history of the accident being that a large iron-bound trunk had fallen on her foot, and caused the injury. The right astragalus was dislocated inwards, fractured into several pieces, and projecting through the skin just below the inner malleolus, which was intact. The structures on the dorsum were greatly bruised and ecchymosed, but entire. As little good could be looked for by pursuing an expectant plan of treatment or by attempting to reduce the dislocation, I suggested excision of the astragalus, and carried it out as follows :—I enlarged the opening, cut a few fibres of the internal lateral ligament, and then, with a small bone forceps, removed the astragalus, which I found broken in four pieces, the head being in its normal situation at some distance from the other fragments. I tried to save periosteum, knowing its importance in such a case as this, but I fear I was not very successful in my attempt. Cold affusion stopped the subsequent oozing from the wound. The hollow was then stuffed with lint soaked in carbolic oil, and the limb put up at once, being strapped to a back splint, furnished with a flat foot-piece, by which means extension was kept up, and all movement effectually prevented. The usual carbolic dressing was laid over the entire ankle. In a few days it was noticed that the cavity was diminishing, and that granulations were springing up on the upper and under surfaces of the wound. The child's health remained wonderfully good, and no complication occurred to mar the recovery.

In about a month, the place where the astragalus had been was entirely filled by new material, which probably became osseous after a time, and over this the skin soon extended. The splint and foot-piece were kept on for ten weeks, and on their removal cardboard side splints,

fixed with plaster, were moulded to the leg from the heel as far as the knee, and the little patient allowed to hop about for a short time daily. Six months after the accident these were taken away finally. The joint was now stiff, there was no shortening, and the place of the astragalus was taken by a mass which did almost as well as the original bone. I now manipulated the joint, extended it forcibly, flexed it, turning it from side to side, endeavouring by these means to break down the adhesions which had formed in the vicinity of the ankle. After this rough handling cold was applied, and no evil resulted. The patient can now bend the joint, has a certain amount of lateral movements, and possesses a sound limb equal in length to the other, the only defect being the presence of a slight degree of valgus in the foot on which the operation was performed. As a precaution, she now wears high-laced boots, which serve in a degree as a splint. This operation of excision of the astragalus is not a very common one, the instances being rare in which that bone is the only one diseased. I believe my case was as favourable for it as well could be, the patient being a child, strong and healthy, and the other bones of the foot sound.

A great measure of the success of the case was doubtless due to the attempt to save periosteum, to the attention bestowed on keeping the foot at rest for a lengthened period, to the continued extension, and to the support the ankle got subsequently while still in a weak condition.—*February, 1876.*

Observations of some of the Effects of Chronic Alcoholism on the Nervous System. By DENIS CHARLES O'CONNOR, A.B., M.D.

ANY physician long engaged in practice becomes aware of a multitude of diseases produced directly or indirectly by the excessive prolonged use of alcohol, affecting nearly every organ or system of organs in the body. Still, if we turn to the class-books in general use—even the most extensive—we only find delirium tremens and hepatic disease mentioned as the direct consequences of chronic alcoholism. A more extended knowledge of the subject is now more necessary than ever, because many men—and, I regret to say, women too—have learned to take alcohol in such times and doses as to produce all its worst effects, without the party ever having been seen drunk. It is only when some time in attendance on the case that the family secret is imparted to the physician. I have, therefore, thought it might be useful to bring under the notice of the Society the result of my experience as to some of the effects of chronic alcoholism on the nervous system. Any one witnessing the condition of an individual in a single fit of intoxication—the early garrulity followed by (in some cases) mad excitement (delirium ebriosorum), ending in apoplectic stupor—would know that the brain has been suffering, and that, though it may regain its healthy condition, after a few attacks,

when they are often repeated, organic changes, congestion, slow inflammation, with exudation, fatty degeneration, atrophy, sclerosis of the brain and spinal marrow will take place. This is first observed in the change of the intellect and moral nature.

Without the party being apparently insane, his acts are irrational. One patient went into the market, bid for estates, bought cargoes of corn, and went through the details of the purchase without exciting any suspicion as to the soundness of his intellect, though his sole motive was insane vanity.

This change in character is only noticed by those who are intimate with the natural habits of the individual. This feebleness of mind oftener passes into dypsomania than delirium tremens. In the former the drunkard is conscious that he is doing wrong, reproaches himself, and still, after making most solemn promises of amendment, he calls for more drink, caring little about the quality, provided he can slake his thirst with any form of stimulant. If he be a man in humble life, he will get into a public-house, and dose away the day, taking small drops, constantly repeated. In a better class of life the family are obliged, in order to prevent exposure, to give him the brandy bottle, which he does not cease to drink till the stomach and liver become affected, ending in excessive vomiting; he then gets an abhorrence of drink, and is reported as a splendid example of reformation for a short time. As these men have no delusions, I tied them in bed on two occasions—once in the Mercy Hospital and once in private practice—with the approval of the wife and other relatives. As they were aware of our object, they did not resent our conduct to them, and when the stomach regained its natural tone, and had become, as it were, sober, they were, at least, temporarily reformed. One whom I treated in this manner has continued temperate to the present day, after many years' trial. Restraint of this kind, so safe and useful here, would be attended with great danger in delirium tremens, in which the patient would not understand its object.

For successful cure, total abstinence is necessary in these cases, contrary to the opinion of some benevolent people and some physicians, who say that it is dangerous to change from habits of drunkenness to total abstinence quite suddenly.

Though this form of malady is believed to be the most hopeless, leading, as it is said, to insanity, and occurring in persons who are predisposed hereditarily to insanity, still I am happy to say I could name a dozen individuals who have completely reformed their habits.

Passing from the effects of alcoholism on the intellect to its influence on the motor nerves, I would instance alcoholic convulsions, of which I have seen a number of examples. Many have come to my study believing they were suffering from epilepsy of the ordinary character, but which I diagnosed to be the result of continued intemperance.

In some of these the attack began with cramps in the feet; another with noise in the ears like ringing of bells; then followed the convulsions, generally of great severity—recovering from one fit, he is stupid, half insensible, and falls into another and another for a space of twenty-four hours or more. Some of the cases still traceable to the same cause partake more of the character of *petit mal*.

These cases are distinguishable from ordinary epilepsy in the entire absence of periodicity, and in being perfectly curable on an alteration of the habits of the patient, unless the attacks have been so frequent and long continued as to produce some secondary affection of the brain.

It is not improbable that reflex irritation from a diseased liver may contribute to this dreadful disease. I believe these inebriates who suffer thus are more curable than others, because of the terror excited in the mind by a dread of a fresh attack. I have met both in hospital and private practice cases such as the following:—The patient first complains of frequent cramps in the lower extremities; then fixed pains, which he calls rheumatism; and finally, hyperæsthesia of the most distressing kind, not suffering his limbs to be touched or moved, because of the agony it would produce. The limbs thus become fixed as if paralysed, but in reality the immobility is caused by the pain which would arise from the slightest motion. There is at the same time a wasting of the muscles, with rigidity. In one or two instances which ran a rapid course the disease passed to the upper extremities, producing general paralysis and death. Others remain in the same condition many years. There are so many pathological changes produced in the spinal marrow by chronic alcoholism that it is hard to fix on any one as a cause of this affection, but I would think it likely to arise from sclerosis of the spinal cord, which may affect sensibility, without corresponding paralysis. If it were ordinary inflammation there would be strong muscular contraction, and if it were ramollissement, the symptoms would more likely be those of “*ataxie locomotrice*,” or a loss both of motion and sensation would be produced. But whatever the pathological condition may be, I am sure the symptoms are traceable to chronic alcoholism. As it was my purpose to call attention to only a few of the effects of alcoholism, as they have come under my notice, I have omitted all reference to some of the graver evils, such as loss of memory, melancholia, feebleness of intellect, subserviency of the will to emotion rather than the judgment, idiocy, insanity, which are the products of this poison, and, worse than all, the transmission of these misfortunes to another generation yet unborn. Can we then, as guardians of public health, and indirectly of public morals, be too careful in our mode of administering this drug, especially to the ignorant, and thus save our profession from the reproach attempted to be cast on it of curing the physical man at the expense of his moral nature.

CLINICAL RECORDS.

Cases of Death from Biliary Colic. By JAMES MARTIN, F.R.C.S.I.,
Portlaw.

CASE I.—In the year 1863 a near female relative of my own, resident with me, was seized with an attack of what I at once diagnosed as gall-stone colic. She had previously, within two or three years, had two slight attacks of pain, accompanied on each occasion by jaundice, but they passed away easily, and were not thought much of. Of these attacks I was not cognisant. . On the present occasion she suffered intensely, and had to take large doses of opium to assuage the pain, adopting at the same time the usual treatment of hot fomentations, poultices, draughts of sulphuric ether, alkalines. I have no notes of the case, but its history is deeply impressed on my mind. I had several medical friends to aid me with their council. She lived for nearly five weeks in intense agony. After the second week the edge of the liver was felt four inches below the cartilages of the ribs, leading some of my friends to look on the case as being one of inflammation and abscess of the liver. At the end of the fifth week she died, with the usual symptoms of death from peritonitis, meteorism, black vomit, cold sweats, &c.; and death came as a relief to protracted and intense agony.

A *post mortem* examination revealed a state of extensive peritonitis, adhesion of the liver (which, however, seemed to be of normal size and structure) to the surrounding parts so as to form a large sac between it and the diaphragm, filled with sero-purulent matter; the gall-bladder and the hepatic ducts were filled with hundreds of pisiform calculi, and in the ductus communis there was a jagged cylindrical mass about two inches long by one inch in diameter formed by a close agglutination of a number of those small calculi.

CASE II.—On the 17th April, in the present year, I was asked to see a lady who had been confined about five weeks previously, and was nursing her baby. She was about thirty-four years of age, spare habit, dark hair, and sallow skin. Her story was that some weeks before her confinement she had several attacks of pain about her sides, which were looked on by her medical attendant as being false labour pains, and for which she took some doses of laudanum. Her confinement passed over easily, she recovered rapidly, and was nursing her baby, having a large supply of milk. On the day previous to my seeing her she had an attack of severe pain, which she could not very clearly describe, and

which I was inclined to look on as being neuralgic, and ordered a 20 gr. chloral draught, with 15 drops of liquor morphiæ, to be taken whenever attacked by pain. On visiting her again on the 10th May, she told me that she had an attack of pain, and that my draught had not relieved her; that a medical friend had stopped a night in the house since my last visit, and suggested some doses of bismuth, which did no good. I mention this to show that up to this we had no suspicion of the true nature of the case. I now went more accurately into an examination of the symptoms, made her undress and go to bed, and then found that she referred the pain (of which she had a bad attack the previous night) exactly to the region of the gall-bladder. She said that she could lay a penny-piece on the spot from which it shot back to the point beneath the angle of the right scapula, and that though occasionally more violent, it was continuously severe. The edge of the liver could not be felt, and the dulness on percussion over it was of no abnormal extent; her skin had become more deeply tinged than natural, but the conjunctiva was but slightly stained; she stated that her urine was porter-coloured, and depositing heavy sediment; her tongue was loaded, and her bowels rather confined. I prescribed Vichy water and small doses of podophyllum and nuxvomica. I warned her husband that I feared impacted gall-stone—that violent paroxysms of pain might set in at any moment, and that the result would be very doubtful. I called four days afterwards, and found her somewhat better; she said that the pain was not constant and less distressing, that the urine was lighter-coloured; her skin was clearer, and the medicine kept up a mild action of the bowels. I gave her a prescription for four draughts, each containing 25 grains of chloral, 20 drops of liquor morphiæ, and 2 scruples of Hoffman's ether, to have by her, in case of the pain becoming severe—one to be taken every two or three hours until relief was obtained. On the following day an intense paroxysm of pain set in suddenly about 5 p.m. She took all the draughts, and getting no relief, I was sent for, and reached her about 11 30 p.m. I found her sitting in a chair, her knees drawn up to her chin, her countenance betraying intense agony, shrunk and collapsed, her skin almost black, voice feeble and hoarse; pulse 120, and scarcely perceptible. She stated that the draughts had produced no effect whatever, that she had had hot fomentations and chloroform applied externally with hot linseed poultices, which had given some very slight relief. She presented the face of a person seventy years of age. I gave a subcutaneous injection of acetate of morphia $\frac{1}{2}$ gr., and tried inhalations of chloroform, with which, however, I was afraid to proceed. Finding after an hour that she was still quite wakeful, and that there was not the slightest relief to the intense suffering, I threw in another $\frac{1}{2}$ gr. of morphia subcutaneously; for half an hour after there was no relief, and then suddenly the accumulated influence of the morphia she had

taken set in, and she became intensely narcotised. I obtained the aid of a *confrère*, and, as may be supposed, spent a very anxious twelve hours, during which time I frequently thought she would have succumbed to the influence of the narcotic; but by steady perseverance—administering enemata of brandy and milk and beef essence, brandy and water by mouth, mustard plasters to neck and between the shoulders, and eight subcutaneous injections, each containing $\frac{1}{60}$ gr. of sulphate of atropia—she came round well, woke up and took nourishment freely, but, sad to say, the intense suffering again set in. On awakening the bowels were copiously relieved of dark, bilious, fæculent discharges. Poultices were applied to the region of the liver; pills of hydrarg. c. cretâ and Dover's powder, with a mixture of nitro-muriatic acid, taraxacum, and Hoffman's ether, prescribed. Meteorism, however, set in, and all the other symptoms of intense peritonitis, terminating with black vomit, and death on the evening of the 12th.

I feel satisfied that had there been a *post mortem* examination something like what was found in the former case would have presented itself. It was untoward that the morphia should have acted so powerfully, yet with such intense agony before me the dose does not appear too large. She took altogether equal to $1\frac{1}{2}$ grs. of morphia— $\frac{2}{3}$ of the muriate by mouth, and $\frac{1}{3}$ of the acetate by subcutaneous injections. When I remember that in the first case a grain of opium was taken for days every four hours, and the enormous doses of opium given in cases of peritonitis, hernia, &c., it occurs to me that during great pain opium is not rapidly absorbed when taken into the stomach, but that given subcutaneously it passes at once into the circulation, and the accumulative action becomes more probable.

It is, therefore, a lesson for the future to be more guarded in the administration of morphia in large doses by that method.

METHOD OF DIAGNOSING REAL FROM APPARENT DEATH.

MONTEVERDI (of Cremona) adds another to the already long list of methods, all more or less equivocal, for deciding between real and apparent death. He recommends a hypodermic injection of strong liquor ammonia in all cases where the least doubt may exist. During life such an injection produces a tolerably extensive erysipelatous-looking red patch. At its worst, this patch is oval, not exceeding 5–7 centimetres in extent, of a red colour, and accompanied by a slight serous exudation, which raises up the epidermis. If the injection be used after death, the spot where it is applied no longer shows this red coloration; its tint resembles that of dirty skin, though its dimensions are the same as in the *pre-mortem* injection.—*Archiv. di Medicina e Chirurgia di Roma*.

K. M. F.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday,
May 20th, 1876.*

| Towns | Population in 1871 | Births Registered | Deaths Registered | DEATHS FROM ZYMOTIC DISEASES | | | | | | | Annual Rate of Mortality per 1,000 Inhabitants |
|--------------|--------------------------|----------------------|----------------------|------------------------------|---------|------------------|------------|-------------------|-------|-----------|---|
| | | | | Small-pox | Measles | Scarlet Fever | Diphtheria | Whooping Cough | Fever | Diarrhoea | |
| Dublin, - | 314,666 | 713 | 636 | — | 13 | 12 | 2 | 15 | 20 | 7 | 26·3 |
| Belfast, - | 182,082 | 591 | 355 | — | 3 | 2 | 1 | 10 | 5 | 8 | 25·4 |
| Cork, - | 91,965 | 237 | 188 | — | 3 | 1 | — | 2 | 9 | 5 | 26·6 |
| Limerick, - | 44,209 | 99 | 93 | — | — | 1 | — | — | 4 | 2 | 27·3 |
| Derry, - | 30,884 | 46 | 35 | — | — | 2 | — | — | — | — | ! |
| Waterford, - | 30,626 | 71 | 86 | — | — | — | — | — | 5 | — | 36·5 |
| Galway, - | 19,692 | 41 | 37 | — | — | — | — | — | — | 1 | 24·4 |
| Sligo, - | 17,285 | 25 | 30 | — | — | — | — | — | 1 | — | 22·5 |

Remarks.

No return was received from the Glendermot District, Londonderry, for the last two weeks of the period, so the death-rate of that city cannot be correctly determined. With the advance of spring the mortality showed a general decline, although the death-rate still remained high, except in Sligo. In London it was 21·5 per 1,000 of the population annually, in Glasgow 27·8, and in Edinburgh 22·5. The mortality in Dublin during the first quarter of 1876 was exceeded, among twenty large towns of the United Kingdom, only in the case of Salford, where the death-rate was 34·6, compared with 34·4 in Dublin. Zymotic diseases were considerably less prevalent and fatal, although the deaths from fever were more numerous than of late in Dublin, Cork, and Waterford. Measles, scarlatina, and whooping-cough also continued as epidemics in Dublin. Of 94 deaths from zymotics registered in this city, 81 occurred within the municipal boundary. Diseases of the respiratory organs caused 135 deaths, including 97 from bronchitis and 23 from pneumonia—the fatality of this latter affection, as usual, showing a relative increase with the advent of E. winds and a dry atmosphere. The deaths from phthisis in the four-week periods of 1876 so far have numbered 87, 91, 85, 100, 82 respectively.

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.,
for the Month of May, 1876.*

| | | | | |
|---|---|---|---|------------------|
| Mean Height of Barometer, | - | - | - | 30·213 inches. |
| Maximal Height of Barometer (on 9th at 9 a.m.), | | | | 30·478 „ |
| Minimal Height of Barometer (on 22nd at 9 a.m.), | | | | 29·652 „ |
| Mean Dry-bulb Temperature, | - | - | - | 50·9° |
| Mean Wet-bulb Temperature, | - | - | - | 46·7° |
| Mean Dew-point Temperature, | - | - | - | 42·4° |
| Mean Humidity, | - | - | - | 72·8 per cent. |
| Highest Temperature in Shade (on 21st), | | | - | 67·3° |
| Lowest Temperature in Shade (on 2nd), | | | - | 32·2° |
| Lowest Temperature on Grass (Radiation) (on 3rd), | | | - | 25·8° |
| Mean Amount of Cloud, | - | - | - | 48 per cent. |
| Rainfall (on 6 days), | - | - | - | ·798 of an inch. |
| General Direction of Wind, | - | - | - | E. and N.E. |

Remarks.

On the 1st of the month the British Islands came under the influence of an area of high barometrical pressure (anticyclone), which advanced in a south-easterly direction from the Atlantic. Accordingly, fine weather, with clear skies, light winds, and cold nights prevailed. At Fitzwilliam-square the grass minimum was below 40° every night until the 21st, and below 34° on eleven nights. On the night of the 2nd it fell to 25·8°. At first the centre of the anticyclone lay over England and Ireland, but on the 7th the highest readings of the barometer were reported from Scandinavia. Fresh N.E. and E. breezes now set in, and prevailed until the 21st, when a S.W. wind appeared in the W., under the influence of a rapidly falling barometer in that region. On the 24th the N. current returned, after a few days of broken, showery weather. On the afternoon of the 30th a thundershower passed S. of Dublin, but this was the only electrical disturbance noticed. The mean height of the barometer was much above the average. Hail fell on the 1st and 23rd, and solar halos were seen on the 4th, 20th, 29th, and 31st.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

HYPERTROPHIC SCLEROSIS OF THE LIVER, WITH CHRONIC JAUNDICE.

UNDER this name Dr. Hanot describes (*Thèse de Paris*, 27 Décembre, 1875, No. 466) a new form of hepatic cirrhosis, characterised by—(1) marked extral-obular sclerosis without any tendency to contraction in the newly-formed connective tissue; (2) intra-lobular sclerosis (frequently); and (3) abnormal development and chronic catarrh of the biliary ducts. Clinically this affection is characterised by a chronic icterus, due to obliteration of the biliary ducts, and by considerable hypertrophy of the liver without ascites, and without abnormal development of the superficial abdominal veins, as seen in ordinary cirrhosis. In the majority of cases the disease, which is essentially one of slow progress, presents nothing special; sometimes, however, the sclerosis has appeared to be subordinate to alterations in the biliary canaliculi, either primary or consecutive to biliary lithiasis. If this fact was definitely established it would be expedient to contrast atrophic cirrhosis, which is developed around the radicles of the portal vein, with hypertrophic cirrhosis with icterus, having its points of departure from around the biliary ducts. As to treatment, Dr. Hanot has seemingly derived some advantage from the application of Vienna paste to the hepatic region.—*Bull. Gén. de Thérap.* 30 Mars, 1876.

ON THE INTRA-ARTICULAR PRESSURE OF THE KNEE-JOINT—TREATMENT OF JOINT DISEASE BY EXTENSION.

SOME interesting observations and experiments have, of late years, been made in reference to the intra-articular pressure of the knee-joint under different conditions, which have bearings of importance upon the physiology and pathology of that articulation, and may lead to practical suggestions of value. Amongst the most important are those of Bonnet, Reyher, and Ranke. The principal factors which these observers have taken into consideration, as modifying the above-mentioned pressure, are—1. The position of the limb; 2. The condition of the peri-articular muscles; 3. The amount of intra-articular effusion; and 4. The traction to which the limb has been subjected. The position of the maximum capacity of the joint, which, of course, corresponds to that of minimum pressure, is the subject of some difference of opinion. While Bonnet asserts it to be that of flexion of the leg at an angle of 60°, the other two observers reduce the angle to 30°. The explanation of the

discrepancy appears to be that Bonnet's observations were made upon dead bodies, in which the muscles were either removed or in the condition of complete relaxation which follows cadaveric rigidity; and that it is owing to the action of these (an element which he neglects to take into consideration) that the angle becomes changed. Ranke found that (taking the muscles into account) on starting with the attitude of complete extension, the pressure diminishes with the flexion of the leg, and attains its minimum at the angle named (30°). On further increasing the flexion the pressure increases rapidly, and becomes considerably greater than the primitive pressure corresponding to full extension, even before the leg has been flexed to a right angle. The contraction of the peri-articular muscles has considerable effect, according to the measurements of Ranke (*Centralbl. f. Chir.*, 1875), in augmenting and modifying the intra-articular pressure. Ranke was unable, from his observations, to establish any relation between the degree of pressure and the amount of intra-articular effusion; but, in individual cases, the law above-mentioned, as to the pressure in different attitudes of the limb, holds, whatever be the amount of effusion. The effect of permanent or continuous traction of the limb (as, *e.g.*, by a weight or elastic force) upon the intra-articular pressure is modified by the other factors. By the expedient of forcing needles into the condyloid extremity of the femur and into the head of the tibia, Reyher (*Deut. Zeitsch. f. Chir.*, 1873) has demonstrated ocularly that a moderate weight is capable of producing a veritable and measurable separation of the articular surfaces—a traction of 100 livres producing an elongation of 3.5 mm. He has further observed that, in cases where the quantity of synovia is normal or but very slightly augmented, the effect of continuous traction is to diminish the pressure within the joint. Paschen (*ibid*) has already made the same experiments and observations with reference to the hip-joint. The effect is the same if the muscles be relaxed or paralysed, whatever be the amount of effusion. But if the quantity of effusion be considerable and the muscles active, the effect of extension by weight will be an increase of the pressure. Some of the applications of these observations to clinical and practical surgery are sufficiently obvious. They illustrate the slightly flexed attitude which the limb tends to assume in acute synovitis; but, above all, they indicate the rational employment of continuous extension ("la methode de distraction," as it is termed) in those cases (of preference) in which inflammatory affections of the joint are attended with *slight* synovial effusion. Reyher would not, however, entirely reject the treatment of acute synovitis with effusion by this method, but would advise aspiration of the joint as a rational preliminary measure, after which it may be adopted in accordance with the principles here laid down. Morosoff (*Centralbl. f. Chir.*, 1875) even goes so far as to assert that the light and uniform compression of the articular structures pro-

duced by traction in these last cases is useful. Another mechanical effect of traction upon the limb, and one which the last-mentioned observer more especially draws attention to in the case of the hip-joint, is of importance in reference to this plan of treatment—viz., the alteration of the points of contact of the articular surfaces, which, in the cases of both the hip and knee-joints, the different attitudes assumed by the limb under different degrees of force prove to take place. We may then enumerate these as amongst the various advantages claimed for the method of treatment of joint affections by extension:—The modification of the intra-articular pressure; the diminution of the contraction of the peri-articular muscles; the alteration of the points of contact of the articular surfaces; and, finally, the rest and immobilisation of the articulation.

T. E. L.

CAUSES OF APHONIA.

PORTER, in a concise and practical paper on "Aphonia, its Causes and Treatment" (*St. Louis Medical and Surgical Journal*, January and February, 1876), considers the causes of aphonia as affecting one of three factors in the formation of the voice. Those impairing the first element, the supply of air, are to be found in emphysema and the last stages of phthisis, where the aphonia is due to the small quantity and force of the air expelled from the lungs; and in a solution of continuity in the tracheal walls, as after tracheotomy or laryngotomy. The second set of causes, those which affect and change the vocal cords, may be due either to purely local lesions, acute and chronic inflammations and morbid growths, or to constitutional disease, phthisis, syphilis, and sometimes with the exanthemata. In phthisis, one-third of a given number will probably have laryngeal complication. Louis reports ulceration of the larynx in 63 cases, out of 193 of phthisis; Guy's Hospital, 47, out of 145. Flint states that 61 cases, out of the 670 on which his recent work is based, had laryngitis. The author himself reports 57 cases, out of 100 observed by him, and believes that the laryngeal disease is secondary to the pulmonary, and that it is rare to find the former without signs of the latter. Syphilitic affections of the larynx are also a common cause of aphonia. Durham gives 30 to 40 per cent. as the frequency with which laryngeal complications are met with in the out-patient syphilitic service at Guy's Hospital. Condylomata, as a cause of aphonia, are reported by Gerhardt and Roth in 8, out of 54 cases of syphilis. Mackenzie reports but 2 in 54 cases examined by him. Porter's experience seems to accord with that of the latter, and herein he agrees with the reporter (Dr. Lefferts), who believes that condylomata of the larynx are only infrequently met with, and that the peculiar voice of the disease is usually, as stated by Porter, due to the erythematous condition of the mucous membrane. The points in differential diagnosis between

phthisis, syphilis, and carcinoma, in the ulcerative process in the larynx, are so well given by the author, that we reproduce them in full:—In ulceration from syphilis, the mucous membrane of the palate is more liable to be first attacked, and afterward that of the epiglottis and surrounding folds. Infiltration and destruction of tissue go on rapidly and deeply, and the edges of the ulcers are red, thickened, and undermined. The thickening does not extend far beyond the margin of the ulceration, or in those parts not as yet invaded by ulceration, and is seldom extensive. The expectoration is thick, yellow, and accompanied by a putrid odour. In epithelioma, the ulceration is, as a rule, first seen outside the larynx, either on the edge of the epiglottis or on the membrane covering the outer surface of the arytenoid or cricoid cartilages, and rarely within the larynx. As the growth increases, marked and irregular thickening is seen around the ulcer, which presents a dirty-gray appearance, with raised edges. The progress of the disease is slow, but steady. In the early stage the expectoration is slight, but when the ulceration is at all extensive it becomes exaggerated and mixed with blood and pus. In phthisical ulceration, the first inroad is made in the mucous membrane over the upper and inner portions of the arytenoid cartilages, and on the ary-epiglottic folds. The epiglottis is not at first ulcerated, but is often thickened and dotted over with small patches of infiltration. The thickening is characteristic. The distinct outline of the arytenoid cartilages is lost; the ary-epiglottic folds look like large solid tumours, and the intra-arytenoid fold is often absorbed in the general thickening. The progress is slow, and, when any considerable surface is destroyed, the ulcer presents a ragged, worm-eaten appearance. There is more expectoration than in malignant disease, and it is more frothy and thinner than in ulceration from syphilis. Of the third and last class of causes of aphonia, those which impede the action of the muscles moving the cords, especially the abductors and tensors, the principal members are mechanical obstruction, either due to the results of the infiltration of the muscular tissue with phthisical, syphilitic, or other deposits, to a growth preventing the movements of the muscles; to a thickening of the mucous membrane from chronic inflammation, and the presence of foreign bodies; also to bilateral and unilateral paralysis of these muscles; and, possibly, a reflex nerve-action from irritation elsewhere, as in granular pharyngitis.—*N. Y. Med. Jour.*, May.

TREATMENT OF PERTUSSIS.

At a recent meeting of the Neurological Society of New York, Dr. S. D. Powell read a paper entitled "A Contribution to the Pathology and Treatment of Pertussis," in which he advocated, as a curative measure, a single complete etherisation of the patient, extending over a period of from thirty to fifty minutes. He hit upon this plan accidentally, as he

found to his surprise that a child suffering from whooping-cough, who was thus etherised for the reduction and dressing of a fracture, did not whoop any more afterwards. In this case the patient was kept under the influence of the anæsthetic for about fifty minutes. Dr. Powell related six cases altogether treated by this method, and hoped that it would be given a more extended trial by the gentlemen present and the profession at large. In two of his cases the paroxysmal stage of the disease had lasted three or four weeks at the time the ether was tried, and in the others was of longer standing. In one or two of them it was necessary to repeat the inhalation a second time, though not to keep the anæsthetic up for so long as at the first. Dr. B. F. Dawson thought that the ether inhalation had been tried in too late a stage of most of the cases, as well as in too small a number, to establish its efficacy; but considered the method eminently worthy a further trial. In the discussion upon this paper, Dr. Allyn observed that possibly the effect of the ether-inhalation might be explained on the ground of the profound impression or shock on the system caused by it, just as whooping-cough had been known to be suddenly checked by a severe and sudden fright.—*Philadelphia Med. Times*.

SALICIN A SUBSTITUTE FOR SALICYLIC ACID.

A RECENT communication by Dr. Maclagan (*Lancet*, 11th March, 1876), giving favourable results which followed the administration of salicin in acute arthritic rheumatism, induced H. Senator (*Centralblatt*, No. 14, April 1st, 1876) to publish the following as bearing upon the therapeutic use of salicin:—Maclagan was led to the employment of this drug in rheumatism by reflecting on the connexion that disease has with intermittent malarial diseases. The justice and correctness of this view, however it may be acknowledged with regard to quinine as a specific against malaria, must remain undecided, for it was known to Maclagan that quinine, like so many other remedies, has already been frequently employed in acute arthritic rheumatism with very variable results. Still the credit is his for having been the first to call public attention to the long-forgotten salicin. For several months back, as soon as Dr. Senator was convinced of the therapeutic results of salicylic acid administered internally, he has been engaged in trials with salicin, having been instigated to it by a very different line of thought, but, as he believes, one more trustworthy than that of Dr. Maclagan. There can be no doubt that salicylic acid exercises its therapeutic influence shortly after its introduction into the blood; and further, the researches of Ranke, Lehmann, Laveran, and Millon, have shown that salicin, when introduced into the blood of the human or other animal organisation, directly or by the stomach, is either completely or in greater part converted into salicylic acid. It therefore occurred to Dr. Senator to practically

utilise this interesting theoretical discovery for the purposes of therapeutics, and to allow the diseased body to prepare for itself the means of cure, from which, *in statu nascenti*, perhaps still better results might be expected to follow, than when it has to make its entrance by the alimentary canal. According to Senator's observations up to the present, the following are the well-pronounced results:—Salicin administered in doses of 2, 5, or 6 grammes lowers the temperature in fevers and febrile conditions quite as effectually as salicylic acid. The diseases in which he had as yet employed it were parametritis, typhus abdominalis (enteric), and phthisis pulmonalis. The effect of salicin on arthritic rheumatism he had not been able to try up to the present, inasmuch as his first stock of salicin, which for a long time back was not officinal, and hence was to be had in but small quantities, was used up in investigations made on patients suffering from other diseases, as well as on healthy individuals; and then when the specific action of salicylic acid in that particular disease was known, curiously enough, almost immediately arthritic rheumatism became very scarce in Berlin, so that he had not had any fresh case in his wards in which to try its effects. But after the observations made by MacLagan, it is not too much to expect that salicin partakes of the same efficacy as salicylic acid. Salicin has none of those unpleasant after-effects (scratching, choking, &c.) which salicylic acid has; it tastes bitter, can be given as a powder rubbed up with sugar, or still better in wafer, or pills, or even in solution. Its price even now, when there is so little call for it, is nevertheless somewhat cheaper than that of salicylic acid and its salts. As it can be very readily obtained from the willow and the poplar, there is no doubt that, by a more general call for it, it would be far cheaper than salicylic acid is ever likely to be. Salicin, however, cannot take the place of salicylic acid, either as an antiseptic agent or for external applications, as has been demonstrated by Kölbe.

J. M. F.

FETAL DIAGNOSIS.

DR. FRANK WILSON reports an analysis of a second series of one hundred and six cases. Of those whose hearts beat from 110 to 125, there were thirty-five males and two females; from 125 to 130, thirteen males and two females; from 130 to 134, eight males and four females; from 134 to 138, five females and two males; from 138 to 143, seven females and two males; from 143 to 170, twenty-four females and two males. Thus it would seem that at least a shrewd guess might be made as to the sex of the child.—*American Practitioner*.

S. W.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. IV.—*On Secondary Hæmorrhage, owing to Ulceration of the Popliteal Artery by a Sequestrum.** By EDWARD W. COLLINS, M.D., Univ. Dub.; Surgeon to Jervis-street Hospital, &c.

AMONG the complications which may arise during the progress of acute or chronic osteal inflammation, involving the lower extremity of the femur, few can occasion more anxious consideration than ulceration of the main artery of the limb. The following case illustrates this subject:—

A delicate boy, eight years of age, while playing on Saturday, July 17, 1875, received an injury over the lower part of the thigh. Œdematous swelling, pain increased on movement, tenderness to the touch, and febrile symptoms having manifested themselves, he was brought to Jervis-street Hospital, and placed under my care, on the following Wednesday. Bromide and iodide of potassium were administered internally, and hot linseed-meal poultices applied to the limb. During the next few days the fever continued stationary (pulse 120; temp. 101° F.); but the local signs gradually augmented in gravity.

By Sunday morning, nine days after the injury, the œdematous swelling had extended from the lower end to midway up the inner side of the thigh. At its lower part the swelling was greatest; and under the œdema, in this situation, a deep-seated tense fulness

* Communicated to the Dublin Biological Club, 1876.

was indistinctly perceptible to the touch. There was no discoloration of the skin; but, during the past two days, the superficial veins on the front, and on this morning those on the outer side, had become more manifest than natural, and turgescient, for some distance up the thigh. The tenderness on pressure, which at first had been confined to the inside and back of the lower extremity of the bone, had now extended to the front. Any attempt at movement caused great suffering. Though the boy did not complain of pain, inquiry from those in the ward proved that he must have suffered considerably, from his cries during the night. He had shiverings at times. Judging from the constitutional disturbance, indicated by the febrile phenomena and rigors, as also from the local signs—pain, exquisite tenderness on pressure and movement, tense deep-seated swelling with superficial œdema, and venous turgescence—that matter had formed under the periosteum, I no longer delayed the deep incision I had contemplated. Chloroform having been administered, I divided the œdematous tissues down to the bone over its inner and lower part. With a director I freed the fascia. Passing my finger into the opening, I felt the bone exposed, and turned the point of the knife, guided and protected by my finger, round its edge, into the popliteal space, striking matter. Blood, meanwhile, had flowed freely from the incision. I, therefore, plugged it with lint, securing over all a pad by means of a bandage carried from the toes to the middle of the thigh. Four hours later, on removal of the bandage and plug, matter issued in large quantity from the opening, its flow being accelerated by pressure in front and in the popliteal space. The boy expressed himself as free from pain (pulse 120; temp. 103° F.). I ordered him quinine, and an increased quantity of stimulants.

Matter continued to come away freely during the succeeding days, especially when pressure was made above and behind the opening. The shiverings ceased; the tenderness diminished; his appetite improved; and he looked well, though thin. The pulse and temperature, however, continued at the same rate as before the incision. Finding that arrangement of his position in bed did not give sufficient exit to the matter, on the fourth day (July 29), I effected a counter-opening in the popliteal space, on the outer side of the inner ham-string tendons, by means of the trocar recommended by Mr. Cock for rectal paracentesis vesicæ. Through the canula I introduced a silver wire drainage tube. Considerable amendment for some days followed this treatment. His temperature

fell to 99.5° F.; his pulse to 108. He looked and expressed himself much improved. Matter issued freely along the tube. The engorgement of the superficial veins almost completely subsided. He ate and slept well. In this condition, on August 2, I placed him under the care of my colleague, Mr. Kelly, during my absence of six weeks from the hospital.

On the second morning after this date a large quantity of blood was found on the poultice. The drainage tube was then removed. Copious bleeding ensued of so alarming a nature that Mr. Kelly forthwith tied the superficial femoral artery at the lower part of Scarpa's space. Thirty-six hours afterwards some secondary hæmorrhage occurred at the site of the ligature. It was checked by pressure and bandaging, and occasioned no further trouble. What its exact source was remains undecided. Forty-eight hours later profuse secondary hæmorrhage took place from the original opening and counter-opening—or sinuses, as I may call them—in the popliteal space. Mr. Kelly now decided, wisely, in my opinion, to amputate the thigh. Ere this operation was commenced, however, the boy's parents declined to permit the removal of the limb, or indeed any further operative measure.

Accordingly, the limb was firmly bandaged from the toes upward, a graduated compress of lint being thus secured, so as to exercise direct pressure over the site of the hæmorrhage. It was soon found that each time the bandage and compress were removed, in order to permit the escape of matter, recurrence of the bleeding took place either immediately or within a few hours. Thus the boy from time to time sustained considerable losses of blood, so that in appearance he became perfectly exsanguine. This drain was counteracted, as far as possible, by the large amount of nourishment he was able to take, and by ferruginous preparations.

On October 1, shortly after my return, a copious bleeding again followed the removal of the bandage. I was summoned from an adjacent ward. Arterial blood, rather darker in colour than usual, kept continuously welling up in large quantity from the cavity of the abscess, through the original opening in front. The counter-opening had long since closed. Direct pressure alone controlled the bleeding. The limb was, therefore, bandaged as before. At a full consultation, on the following morning, it was decided that, as further operative measures were clearly indicated, the parents of the boy should again be urgently solicited no longer to withhold their consent.

On October 4, the boy at this period having again come under my charge, I found him recovered from an attack of diarrhœa, his pulse 130, temp. 103° F. After careful removal of the bandage, a large quantity of very fœtid pus, mixed with blood clots, issued. No immediate bleeding of any moment ensued. The previous history of the case had, however, warned me that this circumstance could not be relied on, as it had invariably happened that after a few hours, when the circulation was sufficiently re-established, bleeding had recurred. My interview with the parents had resulted in their still declining to permit removal of the limb. To other measures they offered no opposition. After anxious consideration of the case at a further consultation, I decided to ligature the external iliac artery about an inch above Poupart's ligament. This I did at 5 p.m. that evening, adopting the modified Abernethian incision. The limb was wrapped in cotton wadding. For two days the boy progressed favourably. Symptoms of asthenic peritonitis then manifested themselves; and he gradually sank from exhaustion a week after the operation.

Evidences of recent peritonitis were found at the autopsy. The periosteum was extensively detached from the femur, and the bone itself diseased to within two inches of the great trochanter. A large ulcerated opening existed in the outer and anterior wall of the popliteal artery. In direct contact with, and pressing upon, the opening lay a sharp-pointed sequestrum. I exhibit it now undisturbed, and embedded in the soft structures surrounding the artery, along with the perforated vessel, exactly as the parts were removed *en masse*, and therefore bearing the same relation to each other as during the life of the boy.*

Some consideration of the practical questions which presented themselves for solution during the progress of this case may not be devoid of interest. That the treatment of secondary hæmorrhage, when occurring after the femoral artery has been ligatured, is replete with difficulty will, I think, be admitted, if we consider the four methods of treatment from which the surgeon has, possibly in turn, to make his choice. They are compression, amputation, the distal and proximal ligature of the artery at the seat of hæmorrhage, the ligature of the artery at a higher point. This question, in connexion with aneurism, has recently received very attentive examination from Mr. W. H. Cripps in a paper which contains an admirable, though I do not think exhaustive,

* The specimen still remains in my possession.

analysis of recorded cases of this nature, with the various methods of treatment therein employed.* The conclusions laboriously arrived at by Mr. Cripps are of great value. From them, I think, it may be regarded as proved that carefully-adjusted compression, with firm bandaging of the limb from the toes upward, and next in order amputation, form the main resources of surgery in these formidable cases, the two other methods being very hazardous and uncertain.

I will now consider how far these methods of treatment were applicable and were carried out in the case I have narrated. Compression was maintained for a period of nearly two months with every care, the limb at the same time being bandaged from the toes upward. The bandage and compress had necessarily to be removed from time to time, to allow of the escape of pent-up matter, which itself imperilled the life of the patient. This method of treatment proved palliative in its results, but no more; for, so often as the pressure was removed, and as soon as the collateral circulation had sufficient time to become established, bleeding again took place. The explanation of this is to be found in the fact that the foreign body, which caused the original ulceration of the artery, lay, as it now lies in the specimen, in contact with the ulcerated opening in the vessel, thus effectually preventing any closure of the opening. The light thrown *post mortem* upon the condition of the artery justifies the conclusion that compression would have failed to arrest the bleeding.

Considering the probable issue of the disease, as was actually proved *post mortem* in extensive destruction of the bone, amputation, at the time it was originally proposed, afforded the best prospect of ultimate recovery. The condition of the artery is a further and, as I hope to demonstrate, a conclusive argument in its favour. At a later period, at the time when the external iliac artery was ligatured, I question much if amputation could have been borne. The consideration of it, however, was not entertained, as it had been expressly forbidden by the parents of the boy. It will be shown from the records of similar cases that such refusal is not uncommon.

The operation of direct deligation of the vessel in the infiltrated popliteal space, in the midst of arteries greatly enlarged, owing to the perfect establishment of the collateral circulation, would have

* The Treatment of Secondary Hæmorrhage after Ligature of the Femoral Artery in Continuity. Cf. St. Bartholomew's Hospital Reports, 1874. Vol. X., p. 92.

been attended with more than usual peril. The difficulties, and even immediate danger, attending a prolonged operation of this nature, have been forcibly pointed out by surgical writers in cases of secondary hæmorrhage from the site of the ligature in aneurisms. It would probably be much more difficult to find the site of hæmorrhage in the wall of a large abscess, extending for a considerable distance up the thigh, the tissues surrounding which were thickened, matted together, and displaced. The determination of the exact bleeding point then must often become well nigh impossible, unless bleeding be allowed to take place; and such renewed loss of blood has proved fatal to patients, even when not so weakened, as this boy was, by previous hæmorrhage and hectic fever. It was not known with certainty what vessel was implicated. That it was the popliteal was conjectured from the position and general characters of the bleeding. But the diagnosis of the exact source of hæmorrhage from deep wounds in the immediate vicinity of a large artery, Mr. Liston has shown to be attended with considerable uncertainty. The case upon which his remarks are founded exemplify this (*Med. Chir. Trans.*, Vol. XXIX., p. 107). That this opinion is no mere hypothesis is proved still more conclusively by the following case in point:—

A carman, aged seventeen, was admitted into St. Thomas' Hospital, under Dr. Bristowe's care, suffering from a sub-periosteal abscess of the thigh of four weeks standing. Exit was given to the matter. Two days later it was found necessary to re-open the incision, and more than two pints of foetid pus escaped. The wound continued to discharge, and the patient to improve, for four days. Then considerable arterial hæmorrhage took place, partly into the abscess cavity, partly externally; and was repeated in a less degree once or twice. The patient became very prostrate, and died upon the following day. At the autopsy, the femur was found bare in almost its entire extent. The source of the bleeding was near the lower portion of the abscess, at a distance from the incision. It was a small arterial branch.—(*Cf. Trans. Path. Soc. Lond.*, 1867. Vol. XVIII., p. 212.)

Lastly, it was by no means improbable that secondary hæmorrhage would take place from the site of the distal or proximal ligature of an artery situated in the sloughing wall of an abscess, even if found and tied, or from some of the enlarged anastomosing vessels severed during the operation.

I will now consider the difficult question of ligature of the artery

at a higher point. The unfavourable result of this operation has been indicated in forcible language by Mr. Erichsen,* and more recently by Mr. Cripps. The former author has indeed maintained that "*gangrene invariably follows double ligature of the arteries of the lower extremity.*" The cases tabulated by Mr. Cripps, however, show that the main source of danger is not gangrene, but further secondary hæmorrhage. Secondary hæmorrhage and gangrene are in fact the two great perils attending secondary ligature of the artery at a higher point; but the former, it thus appears, is three times more frequent than the latter. The explanation of this is found in the varying amount of development of the collateral circulation after the primary ligature. If it be established sufficiently quickly to maintain the vitality of the limb, secondary hæmorrhage is to be feared; if the reverse, gangrene. Secondary hæmorrhage may occur even so late as the termination of the third week after the secondary iliac ligature. But while, from the perusal of Mr. Cripps' tables, I cannot hold with Mr. Erichsen that the secondary iliac ligature is useless owing to gangrene, I cannot coincide in Mr. Cripps' conclusion, that "*under no circumstances is such an operation justifiable, the operation being useless in arresting bleeding.*"^b I have thought it worth while to carefully examine these dogmatic statements, enunciated by such high authorities, to see whether they be really correct. I will now show that they are not; for I will lay before you a series of cases which have escaped the observation of these writers, to prove that complete success has attended the secondary iliac ligature:—

A man, aged forty-eight, suffered from an aneurism of the posterior tibial artery, for which the superficial femoral artery was tied in Hunter's canal. The ligature came away on the seventeenth day. On the thirty-seventh day bleeding commenced from a sinuous opening which remained. By midnight a large false aneurism had formed, the bleeding being with difficulty restrained. On the following day the external iliac artery was tied. All untoward symptoms at once ceased and did not recur; cure.—(Shepherd, Worcester Infirmary.—*Cf. Midland Med. and Surg. Reporter*, 1828–29. Vol. I., pp. 114, 115.)

* *Cf. Surgery* (last ed.) Vol. I., p. 236.

^b Mr. Cripps has based his conclusion upon the circumstance that he has discovered but one case (*Cf. New S. Wales Med. Gaz.*) where the ultimate recovery of the patient was at all due to this operation; and that, in this instance, the operation was only partially successful, as gangrene followed the ligature of the external iliac artery, and the limb had to be amputated.

A man, aged twenty-eight, had an aneurism of the femoral artery, a hand's-breadth below Poupart's ligament. The common femoral artery was tied; and the ligature came away on the fourteenth day. A few days later profuse hæmorrhage occurred, for which the external iliac artery was ligatured. No further unpleasant symptoms arose; cure.—(Ivory, at Sydney, New S. Wales, 1827.—*Cf. Guthrie on Arteries.* 1830. P. 101.)

A man was stabbed over the superficial femoral artery. Great hæmorrhage ensued; and a large diffused false aneurism rapidly formed. The superficial femoral artery was tied in Scarpa's space. The ligature came away on the twentieth day, and all went well until the twenty-seventh. Then, owing to prolonged muscular exertion, copious bleeding occurred from the site of the ligature. It recurred on the twenty-eighth, thirty-first, and thirty-third days. Compression and the tourniquet failing finally to arrest it, the external iliac artery was ligatured just above its epigastric branch, on the thirty-third day. There was no further trouble; cure.—(M. Mouret.—*Cf. Journal des Connaiss. Méd. Chir.*, 1839, June; and *Gaz. Méd. de Paris*, 1839, p. 537.)

A man, aged forty-nine, had a popliteal aneurism. The superficial femoral artery was tied in Scarpa's space. After some days the artery pulsated so strongly close to the ligature that secondary hæmorrhage was feared. On the twentieth day violent bleeding did take place; and the femoral artery was again tied about one inch higher. Pulsation, however, soon returned close up to this ligature, notwithstanding pressure. The external iliac artery was ligatured on the ninth day, after which everything went well; cure.—(M. Duplay.—*Cf. Gaz. des Hôpitaux*, 1871, No. 77; and *Edin. Med. Journ.*, 1871. Vol. XVII., p. 568.)

A man, aged twenty-one, suffered from a traumatic aneurism of the anterior tibial artery, extending from the head of the fibula to the junction of the middle and lower thirds of the bone. The (superficial) femoral artery was tied four fingers' breadth below Poupart's ligament. On the ninth day hæmorrhage, carrying away the ligature, occurred during the dressing. The (common) femoral was tied about two centimetres below Poupart's ligament. Fever ensued, for which venesection was repeatedly performed. On the thirteenth day the ligature came away. All went well till the twenty-fourth day, when the wound had become greatly contracted and the discharge diminished. On that day bleeding commenced. The following morning profuse bleeding took place, and the external iliac artery was ligatured. No further untoward event ensued; cure.—(M. Rousset.—*Cf. Clinique de Marseille—Journ. de Chirurgie de Malgaigne*, 1846. Tom. IV., p. 25.)

A young man was shot in the lower third of the thigh. Bleeding ensued, which was stopped by compression. Some hours later a diffused false aneurism formed, and the whole thigh swelled. Compression failing, after a trial lasting over some days, it was decided to tie the femoral artery. Profuse bleeding occurring from the incision, the aneurismal sac was opened, the coagula removed, and the femoral artery tied immediately above the sac. No less bleeding ensuing, the incision was prolonged upwards, and the artery tied at a higher point. The same want of success attended this operation. Hæmorrhage, as abundant as before, took place, and the patient became extremely prostrated. The wound was filled with styptic charpie, and the external iliac artery ligatured. After this all went well; cure.—(M. Cesare Stroppa.—*Cf. Il Morgagni, Giorn. de Scienze Mediche*, 1868.)

Mr. Cripps, in recording some instances of recovery where the external iliac artery was tied for secondary hæmorrhage from stumps, in which the femoral artery (common or superficial) had been previously tied at the time of amputation, remarks that "these cases are of little value in the consideration of the question, as the danger of gangrene had been removed from the limb." While granting the latter clause, I cannot but notice the fact, before mentioned, that Mr. Cripps' tables clearly show that it is the further recurrence of secondary hæmorrhage, much more than gangrene, which has rendered the secondary iliac ligature, as a rule, unsuccessful. The records of some stump cases prove, I think, the value of repeated ligature of the main artery in the lower extremity at a higher point, as a mode of successfully checking secondary hæmorrhage; for, in some such cases, after ligature of the main artery of the stump at a higher point has failed to prevent further recurrence of hæmorrhage, ligature of the vessel at a still higher point has been rewarded with success:—

A man, aged forty-five, suffered from an old bleeding ulcer of the leg, with solid œdema of the limb below the knee. The thigh was amputated above the knee. Bleeding from the stump took place on the eighth day, and increased on the ninth. The common femoral artery was immediately ligatured. The ligature came away on the fourteenth day. On the thirtieth day rapid bleeding occurred from the groin-wound, which had nearly healed. On recurrence, in the evening, the external iliac artery was tied. Unimportant bleeding took place from the groin-wound on the following day for the last time; cure.—(R. Liston, Univ. Coll. Hosp.—*Cf. Lancet*, 1838–39. Vol. II., pp. 319, 381.)

A man, aged forty-six, had old disease of the knee-joint for which the thigh was amputated. The main ligature came away on the twelfth day. On the day following profuse hæmorrhage took place from the stump; and the common femoral artery was ligatured one inch below Poupart's ligament. On the next day there was a recurrence of profuse bleeding from the stump; and the common femoral artery was tied at a higher point, immediately below Poupart's ligament. On the fifth day bleeding occurred from the site of the last ligature. The external iliac artery, exposed by Sir A. Cooper's incision, ruptured when the needle was passed round it; and the wound instantly filled with blood. By enlarging the incision, after Abernethy's method, the external iliac artery was exposed higher up, and tied about one inch below its origin. The patient subsequently had not an unfavourable symptom; cure.—(Fraser Thomson, Perth Infirmary.—*Cf. Lond. and Edin. Monthly Journ.*, May, 1841, p. 335.)

A man, aged twenty, sustained a compound comminuted fracture of both bones of the leg. Non-union, abscess, and profuse bleeding on the twenty-seventh day, necessitated amputation above the knee. Bleeding from the stump occurred on the sixth day, and increased on the seventh. The common femoral artery was tied. On the fourteenth day, coincident with the date of the coming away of the ligature, considerable hæmorrhage took place from the groin-wound. On the following day it became alarming. The external iliac artery was tied. On the thirteenth day renewed bleeding occurred from the groin-wound. It increased on the sixteenth and seventeenth days. The main artery was tied, for the fourth time, under Poupart's ligament (about one inch above the previous common femoral ligature, and two inches below the external iliac ligature). No further untoward result ensued; cure.—(Paul, Elgin.—*Cf. Lond. and Edin. Monthly Journ.*, 1843, p. 109.)

A man, aged thirty, sustained a compound fracture of the tibia, for which, subsequently, the thigh had to be amputated at its lower third. Profuse hæmorrhage from the stump took place on the fourth day and afterwards on the fifteenth. The superficial femoral artery was then tied in Scarpa's space. On the tenth day bleeding occurred from the site of the last ligature. Plugging, the tourniquet, and pressure failing, on the fifteenth day the external iliac artery was tied. On the twelfth day bleeding took place from the iliac incision. It was at first restrained by plugging, compresses, and the abdominal tourniquet. On its recurrence in the evening the wound was opened; and, the external iliac artery, having been found divided, was religatured. Death appeared now so imminent that, as it was feared another bleeding would prove fatal, the common iliac artery was ligatured on the next day. Not a bad symptom occurred afterwards; cure.—(W. B. MacKinlay, Paisley Infirmary.—*Cf. Edin. Med. Journ.*, 1863-64. Vol. IX., p. 808.)

This special success attending tertiary iliac ligature, for repeated secondary hæmorrhages in stump cases—where the trunk of the vessel, below the point finally deligated, must have been freely supplied through the anastomotic branches—appears to me, therefore, not deserving of summary dismissal from our consideration, when it can be demonstrated that secondary hæmorrhage—which is a far more common peril than gangrene—can be successfully combated thereby.

In my case, since the ulceration of the artery was owing to the constant pressure of a sharp-pointed sequestrum upon the vessel, further deligation could not have prevented further hæmorrhage. But, during the life of the patient, the pressure of a foreign body causing pressure on, and thus preventing healing of, the vessel was not suspected, nor would it have been capable of proof.

The early period—little better than a fortnight after the onset of the disease—at which secondary hæmorrhage occurred in this instance, proved misleading in the extreme. That the bleeding was due to an exceptionally rapid exfoliation of a superficial sequestrum—a circumstance which, as I will show, renders this case unique—was not imagined. The presence of the drainage-tube of silver wire, or the sloughing process, afforded a much more probable solution of the question. Had either of these been the cause, such success would probably have followed primary femoral ligature as attended the following somewhat similar case:—

An abscess having formed over the vastus internus, about four inches above the knee was opened. A fortnight later, sudden bleeding, to the extent of two pints, occurred while the patient, a medical student, was on the night-chair. The femoral artery was compressed, syncope took place, and the bleeding ceased. After two other bleedings the patient became so exhausted that Mr. Liston tied the superficial femoral, and there was no further hæmorrhage.—(*Cf. Med. Chir. Trans.* Vol. XXIX., p. 123.)

At a subsequent period, after the failure of compression, for the reasons I have given at length, secondary ligature of the external iliac artery was adopted. I have endeavoured to point out that this operation, though hazardous, and only to be undertaken when other more generally reliable methods of treatment fail, or, as occurred with me, are inapplicable, has been attended with a certain measure of success, which may justify its performance in exceptional cases. From the enfeebled condition of my patient,

the chances of success it afforded were slight, but they appeared to outweigh the alternative of an otherwise certain death.

The anatomical position of the main artery would appear to render it peculiarly liable to such an injury, in cases of necrosis, especially periosteal necrosis, of the lower end of the femur, yet this exceptionally occurs. I have been able to collect the records of six such cases:—

Necrosis of several years standing, in a man, aged nineteen; recurrent hæmorrhages at long intervals; infiltration of limb; exhaustion; amputation; recovery. Exam.—Popliteal artery perforated by a sharp sequestrum.—(A. Jacob, Dublin.—*Dissert. Med. Chir. de Aneur.*, Edin. 1814. Quoted by Byron.)

Necrosis of three and a half years standing, in a man, aged twenty-one; sinus on inner side above knee; sequestrotomy; five days subsequently, arterial hæmorrhage, believed to have come from the popliteal, to the amount of three pints, after exertion; immediate ligature of superficial femoral artery in Hunter's canal; separation of ligature on tenth day; on thirty-seventh day considerable secondary arterial hæmorrhage; amputation; recovery. Exam.—Several spicula of bone, but source of hæmorrhage not accurately ascertained.—(C. Hawkins, St. George's Hospital.—*Med. Chir. Rev.*, 1834, Jan. Vol. XX., p. 250.

Necrosis of several years standing, in a man, aged twenty-nine; sinus on outer side above knee; two profuse hæmorrhages at intervals; amputation not permitted; compression and bandaging; death from rapid gangrene of thigh and feeble hæmorrhage. P.M.—Popliteal artery perforated by a sharp-pointed sequestrum.—(W. H. Porter, Meath Hospital.—*Dub. Quart. Journ.*, 1834. Vol. V., p. 190.)

Necrosis of several years standing, in a man, aged twenty-five; two sinuses above knee, one on each side; hæmorrhage caused by dancing at a wedding; failure of compression; ligature of femoral artery in upper third, on eighth day; death from rapid gangrene of limb. P.M.—Popliteal artery perforated by a jagged sequestrum.—(Byron, Co. Meath Infirmary.—*Dub. Quart. Journ.*, 1835. Vol. VIII., p. 240.)

Necrosis of seven months standing, in a boy, aged nine; two sinuses above knee, one on each side; several sequestra discharged at times; spontaneous disjunction of lower epiphysis of femur a month before hæmorrhage; amputation not permitted; death from hæmorrhage. P.M.—Anastomotica magna artery (the main artery, replacing popliteal) perforated by a sharp sequestrum.—(H. Thompson, Tyrone Infirmary.—*Dub. Quart. Journ.* 1847, Aug., p. 252.)

Necrosis of twelve years standing, in a young man; five sinuses, one on inside, two on outside, two in popliteal space; repeated profuse hæmorrhages; operative measures not permitted; death from rapid gangrene of leg.—(J. Hamilton, Richmond Hospital, and G. Stokes, Mullingar.—*Dub. Quart. Journ.*, 1854, Aug., p. 85.)

The details of these cases are well worthy of attentive consideration and comparison with the one I have described. In the duration of the disease of the lower end of the femur, anterior to the perforation of the artery, and in the age of the patients, a considerable difference is apparent. In my case it had lasted little more than a fortnight, in a boy only eight years of age. In the annexed cases the disease occurred, save in one instance, in men past puberty; and was of far longer standing, having in one case extended over seven months, and in the remainder over several years. Recovery took place in two instances, but only after amputation of the limb. Ligature of the superficial femoral artery, in one case, was followed by rapidly fatal gangrene. In another, secondary hæmorrhage having continued, as in my case, after ligature of the superficial femoral artery in Hunter's canal, amputation was resorted to with success. In three instances, as occurred with me, amputation would not be permitted. The records of these seven cases point irresistibly to the conclusion that serious hæmorrhage from a sinus, in acute or chronic necrosis, should suggest to the surgeon the strong probability of its dependence on perforation of the neighbouring main artery by a sharp-pointed sequestrum; that the popliteal artery, in an especial degree, is subject to such lesions; and that, in such cases, amputation has been found hitherto to afford the best hope of a successful issue.

ART. V.—*Double Facial Paralysis; with some Remarks upon the Nerves of Taste.* By C. J. NIXON, Physician to the Mater Misericordiæ Hospital.

THE following case is narrated with a view of adding something, however trivial, to the evidence which has accumulated from pathological sources as to the gustatory supply of the tongue:—

Michael M., aged thirty, a labourer, was admitted into the Mater Misericordiæ Hospital on the 3rd May last. Up to twelve months ago he had been a strong active man, but about that time

* Read before the Dublin Biological Club, May 30, 1876.

he contracted syphilis, for which he was treated by the administration of mercury. The chancre healed rapidly; there had been a multiple enlargement of the glands in the groin, but no evidence of constitutional infection. Three months afterwards he was attacked by violent pain in the right ear, which continued for some days, and for which he was admitted into the Infirmary at Hull. A few hours after his admission the left ear became painful, and on the following morning he was completely deaf. At the same time he remarked a change in his features, difficulty in mastication, and a lisp in speaking. Since then these conditions have been unaltered.

When the patient was first seen the general pendulousness of the features was so remarkable, especially the drooping of the lower lip, that it was at once apparent that the case was one of double facial paralysis. He was unable to close his eyelids, whistle, or frown. There was, in short, complete paralysis of the muscles of expression. He could make no attempt at pronouncing the labial consonants, though he could by suction raise the drooping lip, and for a short time keep the mouth closed. There was the tendency usual in such cases for the food to collect between the gums and the cheeks. He had, moreover, a difficulty in swallowing, having frequently to throw his head backwards, press his hand against his lips, and then, with a spasmodic movement, the bolus of food passed into the pharynx. The dysphagia was, I believe, due in part to the labial palsy, and in part to paralysis of the stylo-hyoid and digastric muscles, leading to imperfect elevation of the hyoid bone during deglutition. There was a symmetrical paralysis of the arches of the velum palati; the uvula was normal in position.

There was almost complete loss of hearing. He stated that on certain days he heard obscurely some such sounds as church bells, but that usually he would not hear the loudest peal of thunder. Dr. Rainsford kindly made an auriscope examination for me, and from the appearances presented by the membranæ tympani and the auditory canals was inclined to think that there had been otorrhœa. The patient, however, had no recollection of having had any aural discharge. He complained of some dimness of sight, and upon ophthalmoscopic examination, I found some degree of atrophy of both optic discs. The sense of smell was apparently perfectly intact, though Romberg states that in double facial paralysis it is impaired from palsy of the muscles engaged in sniffing. There was no evidence whatever of implication of the fifth nerve; there was no masticatory paralysis, and the sensibility

of the face, tested several times with the æsthesiometer, was perfect.

The condition of the sense of taste was carefully investigated. The tongue was clean; its temperature 96·4° F.; its sensibility to touch and thermal impressions was normal, and its capability of movement was unaltered. The sense of taste, however, was completely lost upon the two antero-lateral regions. Solutions of citric acid, quinia, salt, and colocynth were applied in succession to the anterior part of the tongue when protruded, but the patient failed to distinguish any of these substances. The method adopted to ascertain his taste perceptions was similar to that employed by Dr. M'Donnell in the case reported by him in "The Medico-Chirurgical Transactions."* It consisted in placing before the patient slips of paper, on which were written the words "sweet," "sour," "bitter," "salt," and "don't know." When a solution was placed upon the front of the tongue he always pointed to "don't know." The following substances were also applied to the front of the tongue, and with the same result:—Milk, meat, flour, fat, ether, and whiskey. All of these substances were readily perceived when applied to the back of the tongue.

The patient experienced no metallic taste upon the application of the two poles of a battery to the front of the tongue, either in passing an ascending or descending electrical current.

As in Dr. M'Donnell's case, no secretion from the submaxillary or sublingual glands followed the application of any sapid substance to the tongue. A brush, steeped in a solution of citric acid, was rubbed along the tongue, but there was no secretion of saliva, whilst in one of the students of the hospital the secretion of saliva following the same application was so rapid as within a minute and a half to flow over the teeth.

No contractions in any of the muscles of the face were produced by electricity. A current from twenty cells of Laclanchè's battery was passed through the muscles, but without the least effect, and a like result followed the application of the induced current.

The patient complained of "megrim" and a reeling sensation in his head when he made the least effort. When walking fast there seemed to be a slight want of co-ordinating power, and he himself attributed his staggering gait to the uneasy feeling in his head.

The history of this case seems to point to its being one of localised meningitis of syphilitic origin. The disease probably

extended from the surface of the temporal bone along the aqueductus Fallopii, and thence to the tympanic cavities. That the trunk of the facial nerve was engaged seems probable, from the absence of muscular response to electrical stimulus. The patient's peculiar gait and the feeling of megrim were due, in all probability, to a disturbance of the circulation through the semicircular canals—a form of the affection described by Menière, and alluded to by Trousseau, under the name of *vertigo ab aure læsâ*.

The progress of the case was not satisfactory. The patient was treated by the administration of the perchloride of mercury and iodide of potassium, but he left hospital at the end of seven weeks with but slight, if any, improvement in his condition.

These cases are invested with special interest in connexion with the sense of taste, and it may not be uninteresting to mention briefly what seem to be views entertained by physiologists as to the gustatory supply of the tongue.

The truth of Panizza's observation with regard to the distribution and function of the glosso-pharyngeal nerve is generally admitted, but it is still a *quæstio vexata* as to what nerves endow with special sense the anterior portions of the tongue. That the lingual branch of the fifth nerve is concerned in taste is proved by the results of the operations of Inzani* and Vanzetti. Both have recorded cases in which, after excision of a portion of the lingual branch of the fifth nerve in man for severe neuralgic affections, there was complete loss of sensibility and of the sense of taste in the antero-lateral region of the tongue on the corresponding side; and the experiments of Biffi and Morganti upon animals support, without qualification, this observation. But as the lingual branch of the fifth is a compound nerve, it was necessary to ascertain what portion of it was concerned in ministering to special sense. Accordingly, Schiff divided the inferior maxillary nerve before it received the branch from the facial, and he found there was no loss of taste in the corresponding side of the tongue. Whilst Schiff consequently concluded that the chorda tympani had some influence upon taste, he pointed out that this influence could not be derived from the facial nerve, which was exclusively motor, and it was on this point that Longet and Duchenne remarked that during galvanisation of the chorda tympani they never observed the slightest fibrillary contractions on the surface of the tongue, and Morganti specially demonstrated that the chorda was "*un nerf sensitif par excellence*."

* Archives de Physiologie. Tome II. 1869. P. 22.

To sustain any *à priori* judgment we might have formed as to the engagement of the chorda tympani in taste, we have several important pathological observations recorded. The well-known case of Lussana,^a in which traumatic division of the chorda was followed by complete loss of taste in the corresponding anterior part of the tongue. This case was followed by one, in many respects similar, recorded by Vizioli.^b Again, many cases have been noted of paralytic affections of the facial nerve in its intra-petrosal stage, where the sense of taste upon the corresponding side of the tongue was either impaired or lost. Wilde^c observed that in cases where the membrana tympani was perforated, and that caustic was applied to it, the patient perceived an acid taste almost immediately upon the same side of the tongue, and Moos has recorded a case where a modification of taste in the fore part of the tongue followed the use of one of Toynbee's artificial tympana.

The two questions, then, which naturally arise are—What is the precise distribution of the chorda tympani, and what is its central origin? It is with reference to the first point that the theories of Bernard and Lussana received so decided a shock from the researches of M. Vulpian.^d This observer excised a portion of the seventh nerve in its intra-petrosal stage. Fifteen to twenty days after the operation he found that most of the fibres of the chorda tympani were altered. He found the altered fibres in the superior portion of the fifth nerve after its union with the chorda tympani, and in the branches going to the submaxillary ganglion, but he failed to obtain any degenerated fibres passing to the tongue. He consequently concludes that the nerve fibres of the chorda tympani are destined for the submaxillary ganglion alone, that it does not furnish any fibres to the tongue, and hence it should not in any sense be regarded as a nerve of taste.

Lussana's answer to Vulpian is that the law of Waller is not applicable to innervations of the fifth nerve. According to both Schiff and Lussana this law is only applicable to nerves which have but one centre of nutrition, but that the chorda tympani, which in its course traverses so many ganglia, may have more than two centres of nutrition; and Lussana conjectures that the gustatory papillæ in the tongue serve as a centre of nutrition to the fibres of the chorda

^a Ibid. P. 28.

^b Opus cit. Tome IV. 1871. P. 155.

^c Aural Surgery. Wilde. P. 305.

^d Vulpian. Leçons sur la Physiologie du Système Nerveux. P. 250.

in the same way as the granular layer of the retina acts as a trophic centre to the fibres of the optic nerve.

It is not uninteresting to trace the course of "*Human Error*." Accordingly, we find that Prevost^a and Reverdin, following the experiments of Vulpian, record that, after sections of the chorda tympani at its origin from the facial, they have invariably found degenerated nerve-fibres in the branches terminating in the mucous membrane of the tongue as well as in those ending in the sub-maxillary gland. Moreover, Vulpian,^b repeating his experiments, and again employing the method of Waller, has arrived at the same conclusions as Prevost, so that we are now fully justified in believing that some fibres of the chorda tympani terminate in the mucous membrane of the tongue.

It remains, then, to determine the channel through which these fibres reach the brain. To ascertain this Schiff performed a number of experiments upon rabbits, cats, and dogs. He divided successfully in these different animals—firstly, the superior maxillary nerve above Meckel's ganglion; secondly, its spheno-palatine branches; thirdly, its posterior branches, including, of course, the vidian nerve; and fourthly, he removed entirely the spheno-palatine ganglion itself. The conclusions drawn by him from these experiments are that the gustatory nerves supplying the antero-lateral regions of the tongue leave the cranium with the second branch of the fifth nerve, enter the spheno-palatine ganglion and join the inferior maxillary nerve, by the sphenoidal nerve—a branch specially described by Henle—some fibres passing by the vidian nerve to the geniculate ganglion and thence to the tongue by the chorda tympani. This view, apparently, is supported by Dr. Owen's dissection in the horse and calf, which shows the chorda tympani to be continuous with the great superficial petrosal nerve.^c It is, however, contravened by different sets of experiments, those of Vulpian and Prevost in animals,^d and Nature's experiments in man. By the former it is shown that ablation of the spheno-palatine ganglia is followed by persistence of taste in the anterior parts of the tongue, whilst from the latter we have, I consider, much more conclusive evidence. Cases have been recorded by Vizioli and by Althaus in which there was complete paralysis of motion and sensation in all

^a Archives de Physiologie. Tome V. P. 264.

^b Leçons sur l'Appareil Vaso-Moteur. Vulpian. 1875. P. 156.

^c Hunter's Collected Works. Vol. IV. P. 194. See case given in support of this theory, Centralblatt. 1873.

^d Also experiments of Inzani. Annali Universali de Medicina. Aosto, 1862.

the parts supplied by the branches of the fifth nerve, with complete conservation of the sense of taste.* Romberg, Lussana, Dr. Noble,^b of Manchester, and Dr. Davidson,^c of Liverpool, relate cases where there was complete anæsthesia only of half the face and tongue, without loss or modification of the sense of taste. These observations directly negative the view of Schiff, whilst they may be regarded as conclusive proofs that the fifth nerve does not itself preside over taste.

It has been conjectured by Scarpa that the chorda tympani is the direct continuation downwards of the portio inter durum et mollem of Wrisberg, which he supposed had a separate origin in the floor of the fourth ventricle at the site of the nucleus of the glosso-pharyngeal nerve. It should, however, be borne in mind that it is in affections of the facial nerve in its intra-petrosal stage that impairment or loss of taste exists. We rarely or never find this loss in cerebral affections where there is facial palsy. Hughlings Jackson remarks, in his "Illustrations of Diseases of the Nervous System," that he has never known loss of taste to be complained of in such case. A most important case, too, has been recently recorded by Wachsmuth, in which the intra-cranial portion of the seventh nerve was found in a state of complete degeneration, though there was no disturbance whatever of the sense of taste. I have read only the outline of this case in Hermann's physiology, but so far it seems to complete the evidence which goes to show that Scarpa's view is not tenable.

There would seem, then, to be but two modes, by either of which the fibres of the chorda tympani must pass to their central origin; either through the communication which exists between the geniculate ganglion of the facial and the tympanic plexus, or by means of the ramus communicans n. facialis et glosso-pharyngei.^d This branch may, possibly, pass in with the facial nerve through the stylo-mastoid foramen leaving the facial as the chorda tympani. This view is entertained by Dr. M'Donnell; and he thinks that the very acute angle at which the chorda tympani arises from the facial tends to support it. Moreover, cases are recorded by Vizioli,^e Stich, and Lotzbeck,^f where, from wounds inflicted by sharp

* Romberg. I. 258.

^b Med. Gaz. 1855. XV. P. 120.

^c Liverpool and Manchester Med. and Surg. Rep. 1875. P. 207.

^d Henle's Anatomy. P. 424, and Fig. 257.

^e Movimento Medico-Chirurgico. Naples, 1869.

^f Deutsche Klinik. 1858, No. 12. 1859, No. 33. Refer also to Eulenberg, Lehrbuch der functionellen Krankheiten. P. 302.

instruments immediately below the ear, which divided the facial nerve after its exit from the stylo-mastoid foramen, with the facial hemiplegia resulting, there was complete abolition of taste in the corresponding anterior part of the tongue. It may be, however, that in those cases inflammatory action extended along the course of the divided nerve, thus affecting the chorda tympani itself or its supposed communication with the nerve of Jacobson. From the number of cases met with of facial paralysis resulting from cold where there is no disturbance of taste, and because the latter is so frequently associated with lesions of the facial nerve in its intra-petrous stage, I would be more inclined to think the fibres of the chorda tympani passed to their central origin by the tympanic plexus than by the ramus communicans n. facialis et glosso-pharyngei.

It is important to observe that under either view the glosso-pharyngeal is, probably, the only nerve engaged in ministering to taste. It is, indeed, but in agreement with the "laws of uniformities" in nature that we should have but one nerve to preside over this sense. The varieties of taste are not more numerous than the perceptions of different shades of colour, the perceptions of smell, or the modifications of sound. It is, certainly, but in accordance with our search after unity to believe that duplex nerves for a single sense do not exist.

The difference in taste of substances upon the anterior and posterior taste areas of the tongue depend, probably, upon two conditions, the dissimilitude in anatomical structure of the two regions, and the close proximity of the base of the tongue to the organ of smell. There can be no doubt but that the sense of smell is to a great extent mixed up with our perceptions of different tastes or flavours. Both senses, we know, are but modifications of touch, and it is conceivable that the particles which strike against the terminal filaments of the gustatory nerves may have their effects modified, or taken cognisance of, when brought more closely within the reach of the olfactories.

It is only by collecting particular instances of disease or particular experiments that we shall be able inductively to arrive at the conclusion of an obscure problem. The record, then, of every case which relates to the function of taste must be of value in helping towards the solution of the difficulties still surrounding its study.

ART. VI.—*Acute Obstruction of the Bowels in a Patient with Cystic Disease of the Ovary; Tapping the Cyst; Recovery.* By RICHARD RYAN, M.D., Q.U.I.; Medical Officer, Bailieborough Workhouse:

IN *The Dublin Journal of Medical Science* for June is recorded a case of cystic disease of the ovary causing acute obstruction of the bowels and death, the diagnosis having been verified *post mortem*. The case I am about to lay before your readers is in many points similar, and I have no doubt the details will prove interesting and instructive.

Mrs. A., aged thirty years, sallow, anæmic complexion, married eighteen months, consulted me for the first time on the 19th of January in the present year. About three years and a half since she remarked, and her mother also noticed, that her abdomen was rather large, but as the menstrual function was normal, medical advice was not sought. Her general health at the time was good, but she had repeated attacks of hæmorrhage from the rectum. On the 24th December, 1875, ten months after her marriage, she gave birth to an eight months' child, which survived only twelve days. She attributes her premature labour to fright, but probably the ovarian cyst had some influence thereon. Since then her health, appetite, &c., have been good.

On examination her pulse was 72, tongue clean, good digestion, but bowels usually constipated for years. In the horizontal position the abdominal enlargement was well marked. Fluctuation all over abdomen in front, with dulness on percussion. The fluctuation was propagated equally in all directions, indicating the absence of septa, whilst the distinctness and sharpness of the undulatory wave, elicited by the slightest touch, bore evidence to the thinness of the contained fluid. The lumbar regions of both sides were resonant. The abdominal dulness was indistinctly traceable into the left iliac region; the right iliac region was resonant. She felt so well at the time—four weeks after her confinement—that it was with some difficulty I could persuade her that the enlargement was not “natural to her,” and the result of disease.

The diagnosis made was cystic disease of the ovary, probably unilocular, and growing from the left side.

I put her on aloetic pills and iodide of potassium, and saw her again in a fortnight. The health and physical signs remained

unaltered, so I recommended her to consult Dr. Kidd, of Dublin. He confirmed the diagnosis, and as her health was good and the tumour not appreciably growing, he did not recommend operation, though considering the case a peculiarly favourable one for ovariectomy. With little hope of benefit he advised a trial of decoction of broom and jalap powder. After four or five weeks of this treatment there was no alteration in her bulk. She was then attacked with severe pain in the left ilio-lumbar region, followed by vomiting and retching, and a most painful feeling of distension. Fortunately, a dose of oil which she took produced a free discharge from her bowels, the pain and retching gradually subsided, and she was as well as ever in thirty-six hours. For some weeks after this she had gastric uneasiness and occasional vomiting, though her general health did not seem to suffer up to the date of the attack which I am about to describe.

April 30th.—She took a rather long walk and felt very well, but after going to bed she was attacked with very severe pain in the left side, accompanied with vomiting same as previously. For this she took another dose of oil, but the stomach rejected it. Next day the nearest medical gentleman saw her and ordered aperient draughts, which she vomited, and leeches, which temporarily diminished the pain; also three injections per anum, only the first of which produced a slight evacuation, and that from the lower bowel.

May 3rd.—I saw her in consultation for the first time during the present attack. She had been getting progressively worse, her condition being as follows:—Dorsal decubitus; legs drawn up; extremities cold; anxiously painful expression of face; pulse 110, small, hard; temperature 100° F.; tongue clean; vomiting everything; respiration hurried, and superior costal. Her abdomen appeared much larger than when I had seen her three months before. Pain and tenderness confined to left side of abdomen. Cannot make any attempt to stir on account of the pain it produces. Track of the descending colon resonant and prominent. No flatus passing per anum. Urine natural in appearance and quantity. I considered it a case of acute obstruction of the bowels, with probably local peritonitis following. Having regard to the extreme urgency of the symptoms, and expecting no benefit from medicinal means only, I proposed to tap the ovarian cyst with the hope of relieving the gut from the direct pressure of the tumour, or of so altering the relative positions of the gut and

the tumour as to enable the former to pass its contents onward. As my *confrère* was afraid that the operation might increase the peritonitis, we laid the case fairly before the patient and her friends. They decided to have her submit to the operation, herself remarking that "she could not live, as if something was not done she would burst." We tapped with the ordinary abdominal trocar, and in the mesian line between the umbilicus and pubis. The fluid, which was thin, pale, straw-coloured, and transparent, measured about eight pints. She expressed herself relieved by the operation, and could turn on her side for the first time. The fulness of the abdomen did not quite disappear. Ordered two grains of calomel and half a grain of opium every four hours. An ounce of castor oil and half an ounce of turpentine, in a pint of thin gruel, to be injected in four hours, and repeated twelve hours afterwards, if necessary. Ice, soda-water and sweet milk, and whey for thirst. To try a little corn flour twelve hours after the operation.

May 4th.—Pulse 112; temperature $100\frac{1}{4}^{\circ}$; tongue clean; gums just appreciably touched; slept a little after operation yesterday; retained the corn-flour; had a little vomiting after each pill, but the pills were not rejected; pain not so bad; countenance less anxious; abdomen soft and less tender; transverse colon prominent, resonant, and tender. The injections were returned unchanged after some hours. No flatus passed per anum; urine normal. I tried to pass the long tube, but could not get it beyond the rectum. Repeated the injection same as before, and hand rubbed for twenty minutes over the abdomen. Ordered to continue pills; to repeat the injection in twelve hours if required, and to take a castor-oil draught on the morning of the fifth. Warm linseed-meal poultices to abdomen renewed every six hours.

May 5th.—Pulse 115; temperature 101° ; gums slightly touched; tongue a little furred. Has taken eleven pills. Slept four hours last night. Had a severe attack of retching, lasting six minutes, on my arrival. "Thought something freed inside," after my departure yesterday. Subsequently passed some foul-smelling matter, but only sufficient to colour the injection which had been given previously. Transverse colon prominent, resonant, and tender. No flatus passing. Vomited castor-oil draught. Her change came on last night, being twenty days since the preceding one. In other respects the same as yesterday. Introduced about twelve inches of the long tube, affording exit to a quantity

of flatus, which gave her much relief, and pulse fell to 105. I then gave an injection consisting of six drachms of tartaric acid, and an ounce of the bi-carbonate of soda, each dissolved in a pint of cold water, and thrown up successively by means of a pint syringe. This was retained. Ordered to continue the pills, but with only half the quantity of opium, as she seems well under its influence, and a soap and water injection in twelve hours, if required.

May 6th.—Did not see her to-day, as I got a telegram stating that her bowels acted.

May 7th.—About four hours after my last visit her bowels moved freely; and, in the succeeding twenty-four hours, she had several evacuations, one of which was particularly offensive. There was a trace of blood in one of the stools. After that she slept well; but yesterday and last night she suffered from tenesmus, with very slight mucous stool, and this morning she felt very hot and sick. Pulse 104, full, soft, and bounding; temperature 100°; tongue furred; abdomen soft and sore, rather than tender. Prominence and tenderness of transverse colon have disappeared. Frequent yawning and rifting with acid eructations. No vomiting since last visit. Ordered an opiate, to relieve the tenesmus, and an alkaline aromatic mixture with bismuth. To continue warm poultices; five grains of rhubarb and five of blue pill to be taken at bedtime. From this date she improved steadily, and was able to walk about her room on the 12th of May.

June 1st.—Mrs. A. drove five miles to see me to-day, and walked five miles yesterday with little fatigue. She looks in good health, and does not appear any larger in the abdomen than when I first saw her on the 19th of last January. She suffers from flatulence and troublesome eructations. Has to take aperient pills regularly. As she looks a little anæmic, I have put her on five-grain doses of the citrate of iron and quinine, three times a day.

Remarks on the Case.—The diagnosis lay between local peritonitis and acute obstruction. To the latter opinion I inclined, and directed both the medical treatment and the operative interference to its relief. The tap wound healed very kindly, and she never complained of any pain at or around it. Before introducing the trocar I ascertained by percussion and palpation the absence of any intervening coil of intestine at the point of intended puncture, and by firm pressure from that time until I withdrew the canula, when the fluid ceased to flow, I prevented the point of the canula and

the cyst fluid from escaping into the peritoneal cavity as the cyst wall collapsed.

Chronic constipation is one of the most frequent results of ovarian tumour; but acute obstruction of the bowels is a very rare complication, if one may judge by the number of recorded cases in the medical journals and the silence regarding it observed in the principal class books on the diseases peculiar to women. To the ordinary medical mind it is a little surprising that the presence of a tumour of large and often enormous size should not more frequently give rise to acute obstruction, and particularly when it so frequently produces chronic constipation. Can it be that in many cases of ovarian cyst, in which the patient's illness, or even death, is attributed to peritonitis, the peritonitis which has only supervened before the arrival of the doctor, is really the effect of acute obstruction and strangulation of the bowels? I believe it is not improbable. In all the cases of tapping that I have seen recorded the operation has been performed with the view of curing or palliating the ovarian disease, or of relieving pain, dyspnœa, or some urgent symptom other than acute obstruction. The statistics of tapping in ovarian dropsy show a mortality of one in five. So high a rate can only be accounted for by performing the operation when the patient is almost dying, or in unsuitable cases, such as multilocular cysts, or cysts with solid contents, otherwise the death-rate is inconceivably high compared with that of tapping in ascites. Hence, the death-rate ought not to deter us in such a case as I have here recorded. The co-existence of pregnancy with ovarian cyst, though unusual, is not very rare, and several cases in which mother and child got well at the usual time for delivery, are on record; but the more common termination, as in my case, is premature labour.

Four considerations point to the lower part of the colon, probably its sigmoid flexure, as the seat of obstruction, viz.:—

1. The urine being in fair quantity.
2. The escape of flatus for the first time when I succeeded in passing the long tube about twelve inches.
3. The fixed pain and tenderness in the left iliac region; and
4. The marked distension of the transverse and descending colon.

Three reasons induced me to attribute the acute obstruction to the ovarian cyst:—

1. The liability of such a large body to interfere with the natural movements of the intestines.

2. The seat of the obstruction being that part of the intestinal tract which, from its relation on the one side to the pedicle and least movable part of the ovarian cyst, and on the other to the pelvic and unyielding part of the abdominal parietes, was specially exposed to pressure and counter-pressure.

3. The immediate sense of relief and subsequent complete recovery after the operation.

BLINDNESS FROM WHOOPING-COUGH.

KNAPP ("Archives of Ophthalmology and Otology," IV. 3 and 4) reports the case:—A boy, three years old, had suffered from whooping-cough six weeks; was emaciated and excitable. For two days the parents had observed loss of sight, and he had complained of darkness, though his condition otherwise had not changed. Knapp found no abnormality externally, and the pupils responded to light, but the boy could not even tell the direction of the window. With the ophthalmoscope marked retinal ischæmia was observed; the nerve-discs were white, the veins scant and thin; in one eye only the main branches of the arteries to be seen as fine threads, in the other no arteries visible. As no change was evident after twenty-four hours of nutritious diet and stimulants, paracentesis of the anterior chamber was performed, in order to diminish the intra-ocular pressure, and so favour the entrance of blood to the eye. The next day the retinal vessels were better filled, and the optic discs less white; the boy could also point out the window. The condition of the retina and discs improved gradually, and the patient became able to recognise objects about him, but vision never reached the normal standard. The general disease did not improve, however, and death ensued, six weeks later, from lobular pneumonia. Blindness from whooping-cough is very rare. Knapp quotes Professor Loomis to the effect that it has been observed almost exclusively in children who have died from lobular pneumonia, and as this was also the result in the present case, the symptom would appear to be a very grave one. The question as to the causation of ischæmia retinæ generally is still undecided, and this case does not offer a solution. Knapp was inclined to refer the ischæmia to the general anæmia and weak action of the heart, or possibly to a hæmorrhagic effusion between the sheaths of the optic nerves. The latter supposition derives some support from the frequent occurrence of conjunctival hæmorrhages in whooping-cough. This frequency of conjunctival hæmorrhage would also lead us to infer intra-ocular hæmorrhages where disturbance of vision occurred, but in the case related nothing of the sort was observed. A point of interest in the case is the good influence which seems to have been exerted by the paracentesis.—*Bost. Med. and Surg. Jour.*

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

WORKS ON DISEASES OF THE HEART.

1. *A Manual of the Diseases of the Heart—their Pathology, Diagnosis and Treatment.* By ROBERT HUNTER SEMPLE, M.D.; Physician to the Standard Life Assurance Company; Physician to the Bloomsbury Dispensary and to the Eastern Dispensary, London, &c. London: J. and A. Churchill. 1875.
2. *Clinical Lectures on Diseases of the Heart and Aorta.* By GEORGE WILLIAM BALFOUR, M.D., St. And.; F.R.C.P., Ed.; Physician to, and Lecturer on Medicine in, the Royal Infirmary, Edinburgh. London: J. and A. Churchill. 1876.

WE cannot congratulate Dr. Semple on the publication of his manual on the diseases of the heart. So many excellent treatises on this branch of medicine are in existence that there is scarcely room for a new one; and no work will be acceptable to the profession which does not give a complete *résumé* of what modern investigation has done for the subject. Although we can agree with Dr. Semple's observation that affections of the heart may be diagnosed with as much ease and certainty as those of the lungs, we scarcely think his manual will afford much assistance in solving the many difficult problems which obscure the diagnosis of the former.

In the early part of the work, and in the chapter on the prognosis of cardiac disease, some judicious remarks are made on the action of the heart as influenced by various conditions, especially with reference to examinations for insurance. The author remarks that a considerable number of persons suffering from heart disease attain to an advanced age, and are quite unconscious of having any cardiac lesion whatever. He suggests that in cases of life assurance the mere presence of an abnormal sound in the heart "should not be regarded in all cases as absolutely fatal to the eligibility of the life." We are entirely in accord with Dr. Semple on this point, but of course the prognosis will depend upon the diagnosis. The

murmur may be only a functional one; or, if due to organic disease, much will depend on its site of development and the time of its occurrence—the physics of the circulation, and the circumstances and habits of the patient must in such cases be taken into consideration.

We shall not notice the chapters on the Anatomy and Physiology of the Heart, and on the Sounds of the Heart, further than to say that the views expressed are for the most part antiquated.

The chapter on Pericarditis gives a succinct and fairly full account of this lesion, due prominence being given to the occurrence of early delirium, as a sign of the affection apt to be misinterpreted.

In Chapter XII. the author tells us that the treatment of pericarditis, endocarditis, and myocarditis, is precisely the same—an observation which requires some qualification. A considerable portion of the chapter is taken up by a description of the different plans of treatment adopted in acute rheumatism, though there is no mention of the quino-alkaline plan of Garrod, from which we have observed most beneficial results. The value of opium in pericarditis is correctly appreciated. Indeed, in parts of the work where the author deals with the practical bearings of his subject, he shows a sound judgment in the choice of the remedies at our disposal for the treatment of disease.

The remaining chapters are, without exception, incomplete descriptions of the forms of heart disease of which they treat. The symptoms and signs of fatty heart are dismissed in less than a single page, no allusion being made to the aortic systolic murmur, or to the abnormalities of breathing, met with so often in these cases.

We consider the author attaches quite undue importance to the observations of French writers, often to the exclusion of information existing from other sources, at least as reliable and more recent. The chapter on exophthalmic goitre is merely a summary of Trousseau's article on the affection, some important symptoms and signs of the disease being omitted. The views of recent writers on the subject are either unknown or unaccountably overlooked.

Dr. Semple has been for a long time favourably known to the profession as a contributor to medical literature. His opportunities for the investigation of the diseases of the heart must have been small, otherwise we should have expected from him a more thoughtful and advanced epitome of what is known on the subject.

Dr. Balfour's book is quite of a different type. In a series of clinical lectures the author deals with the forms of heart disease commonly met with in hospital practice. The clinical observations of practical physicians are always valuable as records of experience, and as affording us data for the explanation of the co-existing phenomena of disease and of its sequences. Hence we are glad to welcome the work of an author who is unquestionably a careful observer, and who has had such favourable opportunities for the cultivation of the study of his subject.

The lectures are twelve in number, but we shall only notice those of special interest. The first lecture gives a careful exposition of the physical signs and symptoms of heart disease. The varieties of cardiac dyspnoea and the various forms of pulse met with are well discussed. Possibly the author lays too much stress upon extreme irregularity of the pulse in the diagnosis of mitral constriction. It is as commonly irregular when associated with a weakened and dilated left ventricle, whilst in many cases of mitral constriction, especially in an early stage of the lesion, the pulse is markedly regular. Much valuable information concerning epigastric pulsation is conveyed in a short space. It is singular, however, that so astute an observer as Dr. Balfour should not have adverted to the *double* pulsation occurring in the external jugular veins as a sign of tricuspid incompetency, though he correctly alludes to the undulatory movement or pulsation synchronous with that of the heart. Dr. Balfour has evidently missed the significance of Parrot's important paper on this subject.

The author gives a somewhat roseate picture of the ease with which the area of cardiac dulness can be determined in disease. He thinks it is only of importance to ascertain its extent by a vertical and a horizontal line, of which he gives accurate limits.

Two lectures are devoted to incompetency of the aortic valves, and they are in some respects excellent. The characters of the pulse, and the murmurs met with in disease of the valves are dwelt upon. The author attaches much importance to a diastolic murmur heard throughout the arterial system as a diagnostic mark of free aortic regurgitation, and subscribes the views of Jaccoud and Duroziez on this point. The murmur, we are told, is inaudible unless the artery be compressed with the stethoscope, so as to produce a fluid vein at the point of pressure. It is heard with greater or less ease, according to the amount of regurgitation present, of which it is a measure. Our experience does not

correspond with Dr. Balfour's as to the frequency of the occurrence of this murmur. Indeed we should not be disposed to regard any murmur produced by artificial means as of great significance in the diagnosis of a valvular lesion, or as a measure of its effects. In most cases of aortic patency there is only a single systolic arterial murmur, heard best in the carotids, whilst there is usually an absence of the second tone due in health to conducted vibrations of the semilunar valves.

Dr. Balfour omits to describe the post-diastolic murmur shown by Hayden to exist where there is a partial incompetency of the valves, which, however, remain texturally sound enough to generate a clear diastolic tone. This murmur is not necessarily associated with an aneurism situated immediately above the arterial zone, and it is an important early sign of slight imperfection in the function of the valves.

Dr. Balfour mentions three conditions of the left ventricle which may follow aortic inadequacy—over compensation, perfect compensation, and dilatation in excess. In the last the overburthened ventricle relieves itself by free regurgitation into the auricle, and thus the danger of its paralysis from over distension is obviated. The dilating force exercised on the ventricle is explained by the application of Pascal's law; whilst the nutritional changes in the myocardium are attributed to defective tension in the coronary arteries resulting from the leakage into the ventricle. The author says, "the interior of the left ventricle is being constantly dilated by a force equivalent to the weight of a column of blood the height of the cranium above the heart, and of the diameter of the ventricular lumen." It seems to us that too much value is attached to the mere height and weight of the column of blood as the dilating force, whilst no account is taken of the co-efficient of capillary resistance. Assuming that the latter is the same in man as in the horse, the Rev. Dr. Haughton has estimated the hæmostatical pressure in the human arteries to be equivalent to 9.936 feet of blood. When the aortic valves are incompetent this pressure is exercised upon the interior of the left ventricle, which consequently dilates from over-strain. Nor should we overlook the fact that this over-strain is, in part, due to the auricular contractions discharging blood into a chamber which is already distended.

Lecture IV. gives a complete description of the physical signs and symptoms of mitral constriction. The acoustic characters of presystolic murmur and its relation in rhythm to the carotid pulse,

are specially alluded to. We can hardly, however, concur in Dr. Balfour's observation, that prolongation of the murmur, followed by a loud and accentuated first sound, is an absolute diagnostic mark of the funnel-shaped valve as distinguished from the diaphragmatic valve. We have observed these physical signs in the latter as in the former condition. We are, however, entirely in accord with the author in his remarks as to the frequent disappearance of the murmur in many cases of constrictive lesion, and its complete absence in some.

Dr. Balfour makes some interesting observations upon the diastolic murmur heard in some cases of mitral constriction. This murmur is by no means of infrequent occurrence. It is heard during the commencement of the ventricular diastole, immediately after the occurrence of the second sound. In most of the cases in which we observed it, it was succeeded by a presystolic bruit, possessing entirely different acoustic characters.

Lectures VI. and VII. deal with curable mitral and tricuspid regurgitation. In cardiac dilatation consecutive to spanæmia, Dr. Balfour accepts Naunyn's view as to the occurrence of a left auricular murmur, which is heard at its maximum intensity one inch to the left of the left edge of the sternum, just at the point where we know the appendix of the left auricle comes up from behind. At the same time the author adds "that there is something in the physical constitution of the murmur—possibly in its pitch, more probably perhaps in the direction of the fluid veins—which makes it physically more capable of propagation in the direction of the appendix auriculi than downwards to the cardiac apex, and in this the relative densities of the auricular and ventricular walls, and their relative tension, must play no unimportant part." The existence of an accentuated pulmonary second sound in those cases is adduced by Dr. Balfour as a proof that the murmur is developed at the mitral orifice, and that it indicates regurgitation. But the writers who have specially directed attention to functional mitral murmur, have looked upon the absence of the sound of Skoda as distinguishing the condition produced in functional from that of organic disease of the mitral valve. In many cases we are inclined to agree with Parrot, that spanæmic murmurs are due to tricuspid regurgitation and the co-existing undulatory movement so often observed in the jugular veins is evidence in favour of this view.

Lecture VIII., on murmurs in the pulmonary artery, is an

interesting and important one. The conditions under which we meet with morbid sounds over the pulmonary area—called, with truth, “the region of romance”—are so variable that it is difficult to accept any single explanation to account for the occurrence of murmurs in this situation. In this lecture Dr. Balfour first alludes to the murmur developed in the left auricular appendix, to which we have already called attention. This murmur is not to be confounded with the rough systolic murmur heard over the true pulmonary area, usually accompanied by fremitus and visible pulsation over the root of the pulmonary artery. In most of these cases the closure of the pulmonic valves produces a distinct click, appreciable to the touch. The peculiarities of pulmonary murmur are its inconstancy, and that it is influenced by the respiratory phenomena, ceasing in most instances during perfect pulmonary expansion. Quincke’s explanation of the occurrence of the murmur is, that under certain conditions there is an uncovering of the base of the heart by retraction of the left lung, which results in a slight compression or twist of the root of the pulmonary artery during the systole of the ventricles, the passage of the blood through the compressed part of the artery into the dilated portion beyond generating fluid veins. The cases recorded by Dr. Balfour in which this murmur co-existed with retracted lung, are, no doubt, valuable in support of Quincke’s view; but it is singular that in diseases where we meet with the most marked retraction of the lung the murmur is absent. The answer given to this anticipated objection, that murmurs are very often inexplicably absent, notwithstanding the existence of the conditions necessary for their production, even if true, is no explanation. But if the conditions necessary for the production of a murmur are present, Dr. Balfour, who correctly attaches so much importance to the study of physics, in analysing the affections of the circulation, must see that the murmur would be invariably produced. We are at a loss to account for the variable existence of murmurs, either because we do not know all the conditions necessary for their production, or because we do not recognise counteracting causes. We must confess we are not as convinced as Dr. Balfour is as to the cogency of Quincke’s arguments, and we think the explanation of the production of pulmonary murmur has still to be discovered.

There are many other points of interest in this work to which we would be glad to refer, did space permit. The lectures “On the Variation and Vanishing of Cardiac Murmurs;” “On the Action of

Digitalis;" and especially that "On Aortic Aneurism and its Treatment," will well repay perusal.

In taking leave of Dr. Balfour's lectures, we can commend it as the work of a well-read and intelligent physician. We have ventured to differ from some of the author's *explanations* of the signs of cardiac disease; but no one reading through his carefully prepared lectures can fail to perceive that he speaks from personal observation and experience; and the certain amount of dogmatism which runs through the book is quite legitimate in his happy attempts to render his subject explicit.

The work is a good one of its class, and bears favourable comparison with the excellent monograph which has lately emanated from the Dublin School of Medicine.

A Contribution to the Medical History of the West African Campaigns. By Surgeon-Major ALBERT A. GORE, M.D., Sanitary Officer on the Staff of the Quarter-Master General's Department during the Ashanti War. London: Baillière, Tindall, and Cox. 1876. Royal 8vo. Pp. 220.

IN the face of the omission on the part of the Government—as is too often the custom in our country in the case of scientific men—to bestow any honour on the man who by his untiring efforts in increasing the efficiency and comfort of the British Army, and in diminishing its death-rate, justly earned both at home and abroad the title of "The Soldiers' Friend," it must be some gratification to the friends and admirers of Parkes that he had the satisfaction of seeing, before the close of his honoured and useful career, numerous proofs of the successful results of his labours. By no combination of circumstances, perhaps, could the teaching of the lamented Netley Professor—to whose memory the volume before us is appropriately and gracefully dedicated—be put to a severer test than by those which surrounded the Ashanti expedition. The science and art of hygiene was proved by its success to be of equal importance with that of war. After all, it is probable that the gentle and retiring disposition of Edmund Parkes would have desired no more pleasing honour than the culminating evidence thus afforded as to the value and importance of his favourite study.

Surgeon-Major Gore is peculiarly fitted to act as medical historian of the West African campaigns. One of Professor Parkes'

earliest military pupils, he joined the African medical service in 1861, and took part in several of the minor military expeditions prior to the late campaign. He gives an excellent historical and medico-statistical account of these and of earlier events in his first chapter. The experience derived from a prolonged sojourn in this unhealthy climate was placed by the author at the disposal of the Director-General of the Army Medical Department, on the outbreak of hostilities in 1873; and to Dr. Gore, we believe, belongs the credit of suggesting and carrying into effect many of the preliminary medical arrangements which conduced so materially to the success of the expedition. He was one of the first medical officers to leave England for Cape Coast Castle, and, on his arrival there, was appointed Sanitary Officer of the Army, in which capacity he had to fulfil the important and arduous duties of advising the military authorities in the selection of quarters or camping ground for the troops, and in the adoption of all precautions necessary for protecting the health of the men. The sanitary memoranda drawn up by Dr. Gore in pursuance of this duty are most complete and excellent in every detail, and were, we are given to understand, acted upon to a great extent throughout the expedition. As showing the importance attributed to the observance of sanitary precautions, we may mention a circumstance not alluded to by the author—viz., that Sir Garnet Wolseley headed his military memorandum of instructions for the troops under his command with certain definite rules for the preservation of their health. These were directed to be strictly adhered to, and were ordered to be read and explained to the men on parade four several times. The history of the fearful mortality that existed among both European and West Indian troops on the Coast from the year 1815 downwards is graphically given by our author, and the lessons to be learned therefrom succinctly formulated. An important one, which was acted upon in the late war, was:—

“That as exposure to the chills and damps of the rains increased the rate of sickness, and intensified its effects, the dry season was the only period when military operations could be undertaken with any prospect of success; and that as this season was very limited in duration such operations should be necessarily short and to the point.”

The duration of Sir Garnet Wolseley's expedition, which was during the dry season (January and February), was fifty-five days.

After a description of the climate of the Gold Coast, the composition of the force employed, and its dress, equipments, and weights carried—matters of much importance in both a military and hygienic sense—the food supply is discussed. The Ashanti ration was equivalent to 25·73 ounces of water-free food. It was more of a respiratory than a flesh-forming ration. Each man had a cup of cocoa and a biscuit previous to commencing his morning's march. The issue of salt, fresh, and preserved meat rations was, we are told, pretty evenly balanced in quantity. The value of tea and other non-alcoholic beverages, of beef-tea, and of alcohol, is discussed, both practically and scientifically. Upon the vexed opinion as to the benefit or otherwise of a spirit ration in tropical Africa, Surgeon-Major Gore expresses himself clearly and with much common sense. He says, amongst other conclusions, that:—

“While marching exposed to the sun the use of alcohol is decidedly injurious and unnecessary, except when men are so utterly exhausted that no other means are available to spur on the failing powers. On the march in the sun alcohol serves rather to increase than to do away with the sense of thirst, and to render further progress more difficult and tiresome; but that after the termination of a long and exhausting march, when men have reached rest and shelter, a dose of diluted alcohol is refreshing and exhilarating, an effect especially observable during damp and chilly weather, at which season, even during a march, a small quantity may be sometimes swallowed without any ill effect being observable. If any form of alcohol is taken during a march in the sun, a glass of light and sparkling beer is the most harmless. That it can be dispensed with in Africa by men of hardy frame and indomitable perseverance under great exertion has been proved by more than one great traveller; but that it does any harm, when taken in moderation at proper times and places, I do not believe.”

The “medico-chirurgical lessons” derived from the expedition were, in a few words—

“A large amount of sickness, increasing rapidly with an insignificant mortality—a comparatively few grave cases of remittent fever and hæmorrhagic dysentery—many slight wounds, and few severe ones—a great tendency to debility, followed in some instances by a prolonged malarial dyscrasia, in others by speedy recovery.”

The greater number of admissions for fever were caused by what is called the “seasoning fever” of the Coast. This, under favourable

circumstances, is an intermittent fever, of a total duration of eight or nine days; but if it occurs in a debilitated subject, or in a person exposed to extreme conditions of paludal poisoning, it is liable to degenerate into a frequently fatal type of remittent. Nothing seemed to have such an effect in bringing on an attack as getting wet. Dr. Gore's description of the different types of malarial fever, with their exciting complications, causes, sequels, treatment, &c., will repay perusal. He hazards the curious, and, we believe, original, but scarcely defensible, suggestion, that marsh poison (the primary cause being a specific germ) may in the nature of its virus and in its manifestations be likened to the poison which produces secondary syphilis; adducing in support of this view a tabular comparison of the manifestations and exciting causes of both diseases. Much interest attaches to the value of quinine as a prophylactic against malarial fever. It was extensively used as such during the expedition, and the evidence adduced by the author on this point is important. The general idea among the European residents in West Africa, he says, is that quinine has little power as a prophylactic against fever, and that when taken in small doses, from day to day, it loses its power as a remedy. When a febrile attack is coming on it may cut it short or abort it when taken in sufficiently large dose immediately before; but the daily use of quinine causes such a tolerance of it that if attacked by fever the patient requires enormous doses of the drug before any effect can be produced. The following instance may suffice:—

“Quinine was administered regularly to the Marines landed at Elmina to guard the place; yet, within a month, all of the men returned on board ill with fever. Men who landed for a day and did not take quinine, fared as well as those who took it and escaped an attack. All the 110 officers and men who landed on the 28th of October, before leaving the ship took quinine; ten returned sick the same day, chiefly suffering from insolation and gastric symptoms. Quinine was served out to the Marines who started for Elmina on the 12th June—five grains in half a gill of rum all round, the same quantity at daylight in port wine; all these men had severe attacks of remittent fever. After wet and damp nights it was always given to the sentries, with no better effect.”

The volume concludes with an interesting historical sketch of the African Medical Service—a service which, surrounded with danger and difficulties, has always proved itself devoted to duty, and earnest in the relief of suffering and disease.

Surgeon-Major Gore's work is deserving of credit for the plain

and unvarnished statements of facts and matter of medical histories it contains, and for the unassuming way in which it is written. To the military medical officer we can heartily recommend its study. He will find in these pages practical suggestions which may prove of great value in any future campaign, and which, in consequence of the importance now justly attached to hygiene in high military quarters, have already been the means of recommending the book to the favourable notice of the combatant officers of the service.

The Practice of Surgery. A Manual. By THOMAS BRYANT, F.R.C.S.; Surgeon to and Lecturer on Surgery at Guy's Hospital; with 559 illustrations. Second Edition, Revised and Enlarged. 2 Vols., pp. 684, pp. 603. London: J. & A. Churchill, New Burlington-street. 1876.

IN the preface to the present edition of his "Practice of Surgery," Mr. Bryant tells us that he has endeavoured to remove such blemishes as gave offence to some of his reviewers in the former one; "at the same time," he says, "I frankly confess that my interests are more deeply concerned in dealing with disease and its treatment than in punctuation and printers' errors."

We were not among those critics who, on the first appearance of Mr. Bryant's work, allowed minor faults to blind us to the real merits of his admirable book. Nevertheless, we are happy to see these faults corrected. It is an improvement also, as a matter of convenience, that the book is now divided into two volumes.

The first volume embraces the elementary principles of surgery and general subjects—viz., tumours, and the surgery of the cutaneous, lymphatic, nervous, circulatory, and digestive systems. The second, the surgery of the respiratory, urino-genital, muscular and osseous systems, with index. In this edition Mr. Bryant has considerably enlarged his book; his introductory chapter, "How to investigate a case," is new, and in a few pages gives some admirable instructions to students upon this important matter. We know no book of its kind which we can more confidently recommend to students than this. It is from first to last eminently practical. The more strictly scientific parts, dealing with such topics as repair, inflammation, and suppuration, give clearly and concisely what a student ought to know and no more. It is much more than an ordinary handbook, made up rather from the experience of others than the

author's own. Mr. Bryant has received and acknowledges the assistance of some of his colleagues; thus the admirable section on his *Microscopical Anatomy of Tumours* has been written entirely by Dr. Moxon; Chapter IX., on Affections of the Ear, has been accomplished with the assistance of Dr. Laidlaw Purves. The illustrations are numerous and good—as in his first edition, those relating to the ligature of arteries are coloured, so as to simplify matters.

This edition is, we think, superior in point of arrangement to the first, and there is no doubt that Mr. Bryant has been stimulated by his “candid friends” to make an excellent work still better than it was.

Medico-Chirurgical Transactions. Volume LVIII. London: Longmans, Green, Reader, & Dyer. 1875. 8vo, pp. 461.

Too long has this volume remained unnoticed in our pages, and we owe the Royal Medical and Chirurgical Society of London an apology for our unintentional and in a measure unavoidable neglect.

The communications in the present volume are of singular interest and originality. Mr. Richard Barwell reports a case in which a gum-elastic catheter, which had been impacted for twenty months in the cellular tissue between the uterus and rectum, was successfully removed—the patient making a complete recovery. Dr. George Johnson writes on the laryngeal symptoms which result from the pressure of aneurismal and other tumours upon the vagus and recurrent nerves. Two contributions to the literature of Phthisis will attract the reader's attention—the first, on the temperature of phthisis pulmonalis, and on the various conditions influencing it, by Dr. C. Theodore Williams; the second, a contribution to the history of laryngeal phthisis, by Dr. William Marcet.

There are also two papers on the Urine which are well worth reading. Dr. W. M. Orr, in a paper on “Urinary Crystals and Calculi,” shows what varied forms uric acid and other urinary deposits may assume in the presence of a fluid containing an albuminous, saccharine, or other colloidal substance. He also investigates some of the conditions under which renal and vesical calculi are produced. Mr. Samuel West contributes a valuable

series of observations upon the elimination of urea in certain diseases—namely, pneumonia, rheumatic fever, diabetes mellitus, and Addison's Disease.

Among the other papers contained in the volume are one on the histology of the so-called "Nutmeg-Liver," by Dr. Wickham Legg; and one on a case of double facial palsy, with observations on the physiology of the nerves supplying the forepart of the tongue, by Dr. Robert M'Donnell. The author observes that his case, taken together with one reported by Dr. J. Althaus in the 52nd. volume of the Transactions, goes clearly to show that the so-called gustatory nerve is in reality a compound nerve, endowed with the sense of taste through the fibres coming to it through the chorda tympani, while the ordinary sense of touch belongs really to the fifth pair.

Mr. Rivington's case of left intra-orbital aneurism, from a fracture of the base of the skull, cured by ligature of the left common carotid artery, is supplemented by an able *résumé* of similar recorded cases; and Mr. Gascoyen's Cases of Syphilitic Reinfection will repay the perusal of the syphilologist.

On the whole, as we have said, the volume is fully an average one as to the number, value, and interest of the communications contained in it.

St. Thomas's Hospital Reports. New Series. Vol. VI. 1875.
Pp. 366.

THIS volume of the Reports contains 22 papers on various subjects, besides summaries of the medical, surgical, and obstetrical cases treated at the hospital throughout the year. Mr. Rainey contributes a paper on the Function of the Thymus Gland, in which he proposes a theory more likely to be admitted as original than accepted as satisfactory. He believes the thymus is a lymphatic gland whose use is to absorb just before birth the granular semifluid material found in the alveoli of the foetal lung. Dr. Harley publishes some experiments on the action of Dulcamara. He is led to believe that a quantity of the juice, equal to six and even nine ounces of the fresh herb, may be taken daily and for many days in succession without appreciable effect. The pharmacopœial preparations he considers to be inert.

Dr. Charlewood Turner has compiled an elaborate paper on the

Function of the Vessels in relation to the Circulation of the Blood. This paper was a thesis for the degree of M.D., Cantab., and we should much like to see his example more generally followed, and a thesis for an University degree made a criterion of a candidate's originality or research, rather than a mere formality to be slovenly performed. Mr. Mason's paper on Hare-lip is thoroughly practical and well worthy of attention from orthopædic surgeons.

Clinical Studies of Disease in Children. By EUSTACE SMITH, M.D., Lond., F.R.C.P., &c. London: J. & A. Churchill. 1876. 8vo, pp. 319.

To the many physicians who have read with profit and pleasure Dr. Smith's "Commentaries on the Diseases of Children," in the pages of *The Medical Times and Gazette* for 1875, the publication of this volume will be indeed a boon. As Physician to the East London Children's Hospital, the author enjoys unusual opportunities of studying disease in the very young, and he has turned his experience to good account in writing these Commentaries. "Diseases of the Lungs" and "Acute Tuberculosis" are the subjects illustrated in the present work. The first twenty pages are devoted to preliminary remarks on the clinical examination of young children, the diagnosis, prognosis, and treatment of disease. It is no disparagement to Dr. Smith to say that the corresponding part of Dr. Charles West's work on the "Diseases of Infancy and Childhood" is more attractive and possibly more useful to the busy practitioner amongst the young.

The subsequent chapters in Dr. Smith's book are on collapse of the lung (post-natal atelectasis), croupous pneumonia, pleurisy, acute catarrhal pneumonia, chronic catarrhal pneumonia, and unabsorbed pneumonic deposits; pneumonic phthisis, fibroid induration of the lung (cirrhosis); acute general tuberculosis (granulæ), tubercular meningitis, and tubercular peritonitis. The Commentaries are illustrative of forty-one carefully recorded clinical cases, which are very graphically and fully reported. Dr. Smith's views as to the pathology and pathogeny of pneumonia, phthisis, and tuberculosis are in accordance with modern thought. They are clearly and elegantly expressed—a circumstance which much enhances the intrinsic value of this admirable work.

PART III.

HALF-YEARLY REPORTS.

REPORT ON PUBLIC HEALTH.*

By CHARLES A. CAMERON, M.D., Fellow and Professor of Chemistry and Hygiene, Royal College of Surgeons, Ireland; Medical Officer of Health and Analyst for Dublin, &c., &c.

FALLACIES IN INFERENCES DRAWN FROM VITAL STATISTICS.

THERE can be no question, in the abstract, as to the great value of vital statistics. Without them it is almost impossible to know whether or not certain districts are salubrious or that the people residing therein are existing under conditions conducive to their health and longevity. The collection and publication of vital statistics have been going on for many years in the United Kingdom, and, no doubt, have been attended with useful results. As, however, they cost the nation a large sum, it is not unreasonable to demand that these vital statistics should be very carefully examined, extended if necessary, and every factor in connexion with them which might lead one to draw false inferences fully explained and assigned its true value. It would be better not to publish any vital statistics than to give to the public figures relating to the deaths and births amongst the community which are liable to be misinterpreted, and perhaps to the injury of particular localities. It may be that the Government or Parliament are not sufficiently liberal in their expenditure in connexion with the registration of births, deaths, and marriages, and that the persons who are entrusted with the collection and arrangement of vital statistics are not sufficiently remunerated to induce them to do their work thoroughly. So far as Ireland is concerned, we are of opinion that

* The author of this Report will be glad to receive any books, pamphlets, or papers relating to hygiene, dietetics &c. They may be forwarded through the agencies of this Journal.

the immense majority of those who collect and arrange statistics relating to births and deaths are miserably underpaid for their services. Registration of the two all-important events in the history of every human being—birth and death—should be effected under such conditions as are likely to render it most useful for statistical, etiological, and sanitary purposes. Is that the case at present in any part of the United Kingdom? It is impossible to answer in the affirmative. The only fact in connexion with the returns of the Registrars-General which impresses the public mind, is the proportion of deaths per 1,000 persons living in the different registration districts. It is assumed that if a district be perfectly salubrious, and its population be placed under proper sanitary conditions with respect to dwellings, food, clothing, &c., that they will die at the annual rate of 17 per 1,000 persons living. In some rural districts this is the actual death-rate; but when, in the case of towns, the bills of mortality show that 22 or 23 per 1,000 of the people die in one town, whilst in another the mortality rises to 26 or 27, the conclusion is jumped at that the sanitary state of the latter must be in a very much worse condition than that of the former. There may be, however, and often are, circumstances in connexion with two such towns which, if known, would show that the inhabitants of both were equally healthy. We shall consider what are the factors which exercise a disturbing influence in connexion with inferences drawn from the present mode of publishing the death and birth rates.

If the death rates be different in two places the population of which are exactly alike, with respect to age, relative number of each sex, &c., then the mere naked death return will indicate very clearly which is the healthier place or people. But there are few places in which all the conditions affecting health and life are equal. The more important factors, which vary in different places, are as follows:—

1. Relative numbers of males and females.
2. Birth-rate.
3. Emigration.
4. Immigration.
5. Average age of the population.
6. Occupations of the people.
7. Proportion of deaths in public institutions which belong to other districts.

All these factors should be fairly considered by vital statisticians when they undertake to pronounce an opinion as to the comparative healthiness of a district. With respect to density of population, the average number of persons living in each house, the nature of the water supply, and of the sewerage arrangements—these are matters which are strictly of local interest, and are not disturbing factors in the sense above indicated. If they operate in raising the death-rate of the district the causes are intelligible and remediable. What we object to is that towns should be compared with towns without making due allowance for the circumstances which, apparently, but not really, cause some of them to figure more favourably than the others. If, for example, there is an emigration from a district of persons amongst whom there is a comparatively small mortality (young men and women), the mortality of those who remain being relatively high, that of the whole district *appears* to be high also. On the other hand, the relative mortality of, say, a town may be lessened by an immigration into it of persons whose mean expectation of life is high. In the district from which emigration has taken place, and in that into which there is an influx of young and healthy people, there may be differential death-rates, but there may also be in each the same mean expectation of life, due allowance being made for age. In other words, although in one town 23 persons per 1,000 die annually, in the other 25, the mortality amongst persons of the same age may be identical in each town—that is, in each town a man of 40 years old is likely to live equally long. Again, if the deaths which occur in large institutions are assigned to the districts in which they occur, instead of the localities from which the deceased had been admitted, very fallacious notions as to the salubrity of the places concerned would be formed.

The high death-rate which during the early period of this year has prevailed in Dublin naturally created uneasiness in that city. To some extent it was due to the severe weather which prevailed, almost without intermission, from Christmas till April. The excess of deaths in the early part of this year, as compared with the corresponding periods of previous years, was due not to an increase of zymotic diseases (except whooping cough), but to that of maladies of the respiratory organs. It is, however, constantly alleged that the death-rate in Dublin is very high, and that it compares most unfavourably with other large towns in the United Kingdom. It is also stated that the death-rate is very much higher

in Dublin than it is in the townships which in part surround it. Lastly, the theory is advanced that were not Dublin grouped with four adjacent townships into a registration area, its death-rate would be stated in higher figures. We are far from asserting that the sanitary condition of the dwellings of the masses in Dublin is satisfactory, and freely admit that vast is the sanitary work which remains to be accomplished in this city. The sum annually expended by the Corporation for the purpose of promoting public health is altogether inadequate for the purpose. But the fact that sanitary work is still lagging in Dublin being admitted, let us see if defective hygienic arrangements are the sole cause of the high death-rate which prevails amongst the people. In all cities their suburbs are, with rare exceptions, inhabited by the better classes, and are placed under better sanitary conditions; but it is a fact that in Dublin the mortality is not much greater in the city than it is amongst the population of the townships, whilst it very slightly exceeds the mortality which prevails in a large rural district in the county of Dublin.

It is usual to compare the state of public health in Dublin with that of London, but really the two cities are not in fairness strictly comparable, and for the following reasons:—

1. London, being the metropolis of the empire, has a larger proportion of the higher, the well-to-do—in a word, the well-fed and cared-for—classes than Dublin has. Vital statisticians admit that mortality is rife amongst the poor, especially their young children, than the rich.

2. London increases in population by the annual immigration of many thousands of young and vigorous men and women from the country—with those persons death deals lightly. In Dublin, on the contrary, the population is stationary, and an undue proportion of the young and strong portion of the people leave the city every year, leaving behind the very old and the very young, who have less chance of long life.

Mr. Sargant argues in an able paper, published in *The Journal of the Statistical Society of London*, June, 1864, page 208, *et seq.*, that in estimating the death-rate of Birmingham, as compared with London, an allowance of $1\frac{1}{2}$ per 1,000 should be made in favour of the former city, on account of the comparatively small proportion of the affluent classes which inhabited it.

The population of the Dublin registration district amounted to 314,666 in 1871, and showed no increase as compared with 1861.

This area includes the City of Dublin, with a population of 246,326, and the Townships of Rathmines and Rathgar, Pembroke, Blackrock, and Kingstown, with a collective population of 68,340. In 1875 the death-rate of this registration district was 27 per 1,000 living, but during the decade ended in that year the mortality amounted to 26·4 per 1,000 of the population. In the City of Dublin the death-rate in 1875 amounted to 28·8* per 1,000 of the population, but, taking the average of the 10 years ended in 1875, the death-rate amounted to 28·4 per 1,000 of the population, and that in the townships to 20·1 per 1,000 of the people.

As 28·8 persons per 1,000 living died in Dublin last year, and only 20·1 per 1,000 in the townships, it might be, and indeed has been, inferred that the insanitary condition of the city is the cause of its higher relative mortality. The mortality appears to be nearly as high in the townships, notwithstanding that their density of population is far less. One-third of the deaths which occur in the Dublin registration district take place in the prisons, hospitals, asylums, and workhouses—about 15 per cent. occurring in the latter institutions. There are only 2 hospitals in the townships, and no workhouse, whilst in Dublin there are 20 hospitals and 2 workhouses. No inconsiderable proportion of the deaths amongst the population of the townships occur in the public institutions situated in the city. These deaths should in fairness be charged to the suburbs. There are in the county of Dublin (including the city) the following Poor Law Unions:—North and South Dublin, and Balrothery Unions, the greater part of Rathdown Union, and small portions of Celbridge, Naas, and Dunshaughlin Unions. The inhabitants of the South Dublin Union in 1871 numbered 199,512, of whom 19,165 belonged to districts not included in the metropolitan registration area; 42,697 resided in the townships, and 137,650 were within the city boundaries. The population of the North Dublin Union in 1871 amounted to 134,091, of whom 108,676 resided in the city, and 25,415 in Clontarf township, and in a wholly rural part of the county of Dublin—neither being included in the metropolitan registration district. The total population of both Unions stood therefore in 1871 as follows:—

* The Registrar-General shows, by the number of interments in the Dublin cemeteries, that 9·8 per cent. of the deaths, from 1864 to 1870 inclusive, were unregistered. Non-registration of deaths is, however, not peculiar to Dublin.

| | | | | | |
|---|---|---|---|---|---------|
| Resident in the city | - | - | - | - | 246,326 |
| Resident in the townships included in the metropolitan district * | - | - | - | - | 42,697 |
| Resident in townships not included in the metropolitan district and in country places | - | - | - | - | 44,580 |
| Urban population | - | - | - | - | 246,326 |
| Suburban and rural population | - | - | - | - | 87,277 |
| Total population of both Unions | - | - | - | - | 333,603 |

We now see that what we may term the workhouse deaths in a population of 333,603 are charged exclusively to a population of 246,326, and that to the latter population are also charged the hospital deaths of an extraneous population of 44,580, and the greater proportion of the deaths in hospital which occur in the townships' populations of 68,340. That is, with the exception of two hospitals in the townships, there are only the city hospitals to receive patients from a population of 359,246—that of the city, townships, and rural parts of Dublin Unions. Indeed, with the exception of the workhouse hospitals in the Rathdown and Balrothery Unions, there are no others in the county of Dublin, the whole population of which are naturally dependent upon the Dublin hospitals. In England the rural population obtain, as a rule, medical relief in the county infirmaries.

The workhouse deaths in a rural population of 42,697 are charged to the metropolitan district, but a portion of the townships, with a population of 25,643, is in the Rathdown Union, the workhouse of which is situated in a rural district. If we set off this number against 44,580 (that of the suburban and rural parts of the Dublin Unions already referred to), the difference will be 18,937. Thus it will be seen that the 15 per cent. of the deaths amongst a population of 333,603 which occur in workhouses are charged to a population of 314,666, and not only so, but to that portion of it comprised within the city of Dublin. In order to

* The Census Commissioners give the population of Rathmines and Rathgar Township as 20,562; the Registrar-General as 20,939. Donnybrook District (presumably Pembroke Township) is stated by the Registrar-General to include 21,758; according to the Census Commissioners Pembroke Township contains 21,102 inhabitants. The difference between the numbers given by the Census Commissioners and the Registrar-General we have added to the figures representing the extra metropolitan registration population. We think, however, that the actual population of the townships should be the basis of the Registrar-General's returns, as is the case in the city.

ascertain the actual difference, if there be any, between the rates of mortality in the city and its environs, we should eliminate altogether the deaths which occur in eleemosynary institutions, unless we are able, in the case of hospitals at least, to charge the deaths to the localities in which the deceased had habitually resided. We have done this in the following table, in which are included some vital statistics of Balrothery Union, selected because it is the only purely rural union in the county of Dublin:—

Registration of Death in 1875.

| LOCALITIES | Population in 1871 | Deaths from all causes | | Deaths from Zymotic Diseases ^a | |
|---|-----------------------|---------------------------|---------------------------------------|--|---------------------------------------|
| | | Num- bers | Ratio to every 1,000 Persons | Num- bers | Ratio to every 1,000 Persons |
| Dublin Registration District - - | 314,666 | 8,482 | 27 | 1,011 | 3·2 |
| Do., exclusive of Public Institutions - | 306,548 | 5,876 | 19·2 | | |
| Do., exclusive of Workhouses only ^b - | 309,828 | 7,066 | 22·8 | | |
| City of Dublin - - - | 246,326 | 7,105 | 28·8 | 844 | 3·4 |
| Do., exclusive of Public Institutions - | 238,404 | 4,591 | 19·3 | | |
| Do., exclusive of Workhouses only - | 241,488 | 5,689 | 23·6 | | |
| Rathmines, no Hospitals, &c. - | 20,989 | 433 | 20·7 | 65 | 3·1 |
| Donnybrook - - - | 21,758 | 494 | 22·7 | 53 | 2·4 |
| Do., exclusive of Public Institutions | 21,562 | 412 | 19·1 | | |
| Blackrock - - - | 7,182 | 130 | 18·1 | 16 | 2·2 |
| Kingstown - - - | 18,461 | 320 | 17·3 | 33 | 1·8 |
| Do., exclusive of Public Institutions - | 18,461 | 310 | 16·8 | | |
| Total of Townships - - - | 68,340 | 1,337 | 20·1 | 167 | 2·4 |
| Do., exclusive of deaths in all Institu- tions - - - | 68,144 | 1,285 | 18·9 | | |
| Balrothery Union - - - | 20,066 | 474 | 23·6 | 63 | 3·1 |
| Do., exclusive of deaths in Workhouse | 19,831 | 434 | 21·9 | | |

^a Comprising Smallpox, Measles, Scarlatina, Diphtheria, Whooping-cough, Fever, and Diarrhoea.

^b The Manchester Workhouse is in the country, but the deaths therein are charged to the city. In London an attempt is made to assign all the deaths which occur in Public Institutions to the district from which the deceased had been admitted.

The death-rate amongst the people who are not inmates of public institutions, as shown in the foregoing table, is almost identical in Dublin and the townships; and with respect to zymotics, the fatality from them is 31 per 10,000 persons in Balrothery Union, 24 per 10,000 persons in the townships, 34 per 10,000 persons in Dublin, and 40 per 10,000 on the average in English towns.

There are in Dublin City 20 hospitals, 2 *Maisons de Santé*, 15 asylums, 13 orphanages, 2 prisons, 1 lunatic asylum (for Dublin, Drogheda, and the counties of Dublin, Wicklow, and Meath), and 2 workhouses. In the townships there are 2 hospitals and 6 asylums, &c.

The foregoing statistics (together with a few additional facts), may be summarised as follows:—

1. The death-rate in Dublin registration district was, in 1875, 27 per 1,000 persons.

(a) In the Townships it was 20·1 per 1,000.

(b) In Dublin City it was 28·8.

2. The high death-rate in the city is to some extent caused,

(a) Because within it are situated the workhouses of an outside population amounting to 87,277.

(b) Secondly, because, with two exceptions, the hospitals, &c., of an extra urban population, amounting to 112,920, are situated within the city boundaries.

3. When the deaths which occur in the workhouses, hospitals, &c., are not taken into account, the death-rate in Dublin city is 19·3 per 1,000 persons; in the Townships 18·9 per 1,000 persons.

4. That in Dublin city, with all its hospitals, workhouses, &c., only 34 persons per 10,000 die annually from zymotic diseases, whilst in the Townships, with their two hospitals, 24 persons perish annually from those maladies. Even in the purely county Union of Balrothery 31 persons die annually from contagious complaints.

5. The death-rate in Dublin, with a population of 246,326, concentrated within an area of 3,800 acres, is, excluding public institutions, 19·3 per 1,000 persons; in the townships, comprising a population of 68,340, diffused over 6,242 acres, the deaths, excluding those in public institutions, are 18·9 per 1,000 persons.

The death-rate in the whole county of Dublin, including the city, appears to be high. We should carefully investigate the causes which conduce to this apparently, at least, unsatisfactory

condition of the public health. Climate, soil, social conditions, birth-rate, emigration, immigration, and many other factors of great importance have, however, to be fully considered before we should venture to assert that this or that town was more or less unhealthy than some others compared with it. If the Corporation of Dublin are to be held accountable for the high death-rate of Dublin, it will be only consistent to hold responsible the governing bodies of Rathmines and Pembroke for the equally great mortality in their jurisdictions.

The author of this Report, in April last, called public attention to the facts above enumerated, and since then that able and zealous official, Dr. Malachi Burke, who has lately assumed the supreme direction of the Irish Statistics Department, has in one important respect amended the bills of mortality in the Dublin registration area. Henceforth the deaths which occur in public institutions will be assigned to the districts from which the deceased persons had been admitted. In the returns for the quarter ended on the 1st July, the deaths registered in the Dublin Registration District amounted to 2,040—1,072 males and 968 females—affording an annual ratio of 1 in 39, or 26 in every 1,000 of the population. The average number in the second quarter of the previous ten years was 1,996.

The number of deaths registered last quarter in that portion of the city north of the Liffey was 757, or 28 in every 1,000 of the population; and the number in that portion south of the river was 938, affording an annual mortality of 27 in every 1,000 of the population. In the suburbs of Rathmines, Donnybrook, Blackrock, and Kingstown, the number of deaths registered was 345, being equal to an annual death-rate of 20 in every 1,000 of the population.

The number of deaths registered in London during the same period was 18,218—a number equal to an annual mortality of 21 in every 1,000 of the inhabitants.

Of the 2,040 deaths registered in the Dublin District during the quarter, 653, or 32 per cent., of the total deaths occurred in public institutions.

The deaths from zymotic diseases registered during the quarter numbered 300, or 14·7 per cent. of all the deaths, and equal to an annual rate of 3·8 per 1,000 of the population. In the corresponding quarter of the year 1875 zymotic diseases proved fatal in 251 instances. The deaths from the seven principal diseases of this class represent a rate of 2·6 per 1,000 of the inhabitants.

In the weekly reports issued during July the Registrar-General shows the death-rate in Dublin districts for ten preceding weeks, assigning the deaths which occurred in hospitals, &c., to the districts from which the deceased had been admitted. If the correction had not been made the deaths would have been, during the ten weeks ended on the 15th July, in the ratio of 22·74 per 1,000 persons living, but with the correction the ratio is 21·67 per 1,000, or less by 1·07 per 1,000. This difference may not appear to be worth much, but a diminution of one death per 1,000 is, especially when the number of deaths is so low, important. We are, however, disposed to believe that there are still deaths assigned to the city of Dublin which ought to be charged to extra-mural districts. It is singular that the death-rate in the two city districts in which the workhouses are situated is 26·5 per 1,000 in one, and 29·3 in the other, whilst in the other five districts the deaths are in the ratio of from 18·3 to 23·3, the average being 21·1 per 1,000 persons living. As the workhouse districts extend into almost country places, they cannot be more unhealthy than the central and more densely populated portions of the city. We can, therefore, only account for their very high bills of mortality by assuming that all the deaths which occur in the workhouses situated within their limits are not assigned to the districts to which they fairly belong, an undue proportion being charged to the workhouse districts. It is probable that when a pauper dies, and that the district from which he was admitted is not known, the workhouse district is that which is charged with the death. There is a wide-spread feeling, especially amongst medical men, in Dublin, that the city is in a very unsanitary condition. The Dublin Sanitary Association (an organisation whose object is the improvement of the dwellings of the working classes and the promotion of general hygienic measures) have urgently directed attention to the high bills of mortality, which, they assert, give Dublin an unenviable position amongst the larger towns of the United Kingdom. The Society maintain that the high mortality depends upon "certain abnormal and remediable conditions," and is not referrible to any disturbing influences, which, if eliminated in the calculations upon which the death-rate is estimated, would satisfactorily account for the apparently unhealthy condition of the city. The following table has been constructed by the Society, and is to be found in an interesting appendix (on Vital Statistics) in their last Annual Report, page 42 :—

TABLE showing the Annual Death-rate per 1,000 living in Thirteen Large Town Districts of the United Kingdom, in Dublin City and Dublin Suburbs, and in the different Divisions of the London Registration District, for each of the ten years ending December 31st, 1875, with the average Annual Rate of Mortality for the same period, and the Density of the Population in each District.

| Year | Dublin District | Dublin City | Dublin Suburbs | London District | London North | London Central | London East | London South | London West | Edinburgh | Glasgow | Liverpool | Manchester | Salford | Birmingham | Leeds | Bristol | Hull | Sheffield | Newcastle-on-Tyne |
|--------------------|-----------------|-------------|----------------|-----------------|--------------|----------------|-------------|--------------|-------------|-----------|---------|-----------|------------|---------|------------|-------|---------|------|-----------|-------------------|
| 1866 | 28.7 | 30.1 | 24.4 | 26.5 | 25.3 | 27.5 | 34.0 | 24.1 | 22.6 | 25.8 | 29.3 | 41.8 | 31.9 | 29.0 | 24.1 | 32.5 | 24.9 | 24.4 | 28.1 | 32.1 |
| 1867 | 27.4 | 29.7 | 21.3 | 23.0 | 23.1 | 25.1 | 24.2 | 22.0 | 21.8 | 25.2 | 28.2 | 30.6 | 32.8 | 28.2 | 25.6 | 26.2 | 21.7 | 23.7 | 25.4 | 31.8 |
| 1868 | 25.4 | 26.5 | 20.0 | 23.6 | 22.9 | 25.6 | 25.6 | 22.0 | 22.3 | 24.8 | 30.4 | 31.0 | 34.3 | 31.0 | 25.9 | 28.3 | 22.3 | 26.6 | 28.1 | 27.1 |
| 1869 | 24.4 | 26.3 | 18.9 | 24.6 | 23.5 | 26.8 | 28.0 | 23.9 | 22.2 | 27.7 | 33.7 | 30.4 | 30.7 | 26.4 | 23.1 | 26.6 | 23.1 | 27.4 | 28.7 | 27.2 |
| 1870 | 24.6 | 26.9 | 18.5 | 24.1 | 23.6 | 26.1 | 25.1 | 23.5 | 23.8 | 23.8 | 29.6 | 32.0 | 29.8 | 25.8 | 23.0 | 28.7 | 28.4 | 23.8 | 26.5 | 25.4 |
| 1871 | 25.9 | 27.9 | 20.0 | 24.6 | 25.6 | 25.0 | 26.1 | 24.0 | 22.4 | 27.0 | 32.9 | 35.1 | 31.2 | 30.4 | 24.9 | 26.4 | 23.2 | 23.2 | 28.3 | 32.2 |
| 1872 | 28.5 | 31.6 | 19.0 | 21.5 | 21.2 | 23.6 | 23.6 | 20.9 | 19.6 | 26.7 | 28.7 | 27.1 | 28.6 | 25.8 | 23.0 | 27.9 | 22.0 | 26.1 | 26.0 | 26.3 |
| 1873 | 26.1 | 27.7 | 19.0 | 22.5 | 21.2 | 25.1 | 25.2 | 22.1 | 20.5 | 22.0 | 29.1 | 25.9 | 30.1 | 29.3 | 24.9 | 27.6 | 23.1 | 23.9 | 25.8 | 30.1 |
| 1874 | 26.0 | 27.9 | 20.0 | 22.6 | 21.8 | 25.6 | 25.4 | 21.4 | 20.9 | 23.6 | 31.1 | 32.0 | 30.4 | 29.6 | 28.8 | 28.7 | 22.7 | 25.5 | 26.9 | 29.2 |
| 1875 | 26.9 | 28.9 | 20.0 | 23.7 | 22.3 | 26.0 | 25.5 | 24.0 | 22.1 | 23.7 | 28.6 | 27.5 | 29.9 | 31.5 | 26.5 | 26.4 | 26.8 | 27.4 | 24.8 | 26.1 |
| Average | 26.4 | 28.4 | 20.1 | 23.7 | 23.1 | 25.6 | 26.3 | 22.8 | 21.8 | 25.0 | 30.2 | 31.3 | 31.0 | 28.7 | 24.8 | 27.9 | 23.8 | 25.2 | 26.9 | 28.7 |
| Persons to an Acre | 31 | 65 | 11 | 45 | 56 | 150 | 107 | 21 | 52 | 48 | 100 | 98 | 83 | 26 | 43 | 13 | 43 | 36 | 13 | 25 |

It may be, as the Sanitary Association assert, that the state of the public health in Dublin is low by reason of purely local and remediable influences; but we are disposed to believe that the vital statistics of the city, upon which, of course, the Sanitary Association must mainly depend for their facts, are liable to be misinterpreted. In the United Kingdom there are hardly any two districts the vital statistics of which can in strictness be fairly compared without making due allowance for various disturbing influences. The Sanitary Association admit that the mortality from zymotic diseases in Dublin is not above the average which prevails in English towns, but they say that its high general mortality with a low zymotic death-rate is a better proof of the general low state of the public health than occasional outbreaks of imported zymotics. In every work on sanitary science we are, however, told that the fever death-rate is the sure test of the sanitary condition of a district.

The average age of the population, the excess of births over deaths, a great preponderance of females over males, and various other circumstances, may irremediably cause one town to have a higher death-rate than another.

In London the females exceed the males in the proportion of 15 per cent., whilst in Dublin the excess of females over males is only 13 per cent. Small as the difference in this respect is between the two cities, it must exercise a perceptible effect in increasing the death-rate of Dublin, owing to the far greater mortality which prevails amongst males. Thousands of young and healthy women annually go from the country to London* and procure employment as domestics. A large proportion of these women are better fed, and placed in many respects under superior hygienic conditions in the houses of the wealthy denizens of London, than when they lived in their country homes. The very low death-rate which distinguishes so many towns of English fashionable resort is evidently due to the enormous preponderance of females over males. In Bath the females are 53 per cent. in excess of the males, in Leamington 43, in Brighton 34, and in Clifton 73.

The influence which a high birth-rate exercises upon the death-rate is a subject which has repeatedly been discussed by eminent statisticians and sanitarians. As the mortality amongst young children

* In London the deaths amongst males are in the ratio of 25·7 per 1,000, whilst females are at the rate of only 21·8 per 1,000. There are 115,618 males and 130,708 females in Dublin city, and yet the deaths amongst the people comprise equal numbers of the sexes.

greatly exceeds that which prevails at other periods of life up to a rather advanced age, it seems evident that wherever there is a relatively large proportion of children in a population there must be a high death-rate. In Dublin the births registered are but slightly in excess of the deaths, being only in the ratio of 28 per 1,000 of the population. It is, however, evident that a large proportion of the births which occur in Dublin is not registered, for the fecundity of the Irish people can hardly be questioned. Accepting, however, official statements with respect to births in Dublin, the ratio to the number of the population is low, and the result should be a low death-rate amongst the general population. It must, too, be noted that whilst 12 per cent. of the population of Ireland are under 5 years old, not quite 11 per cent. of the population of Dublin are under that age.

How greatly the mortality of a district is increased by the infantile mortality may be inferred from the fact that about 80 per cent. of the excess of mortality in English towns, as compared with the open country, is due to deaths of children under 5 years. That is, if the deaths of children in town and country under 5 years old be excluded, the average mortality of persons above 5 years old is only 2 per 1,000 more in the towns than in the country.

The average age at death is considered by some authors to afford the best test as to the salubrity of a district, but it is evident that this criterion is not free from fallacies. The average age at death of the inhabitants of a town—such as, for example, Greenwich, in which the well-known institution for old sailors is situated—in which a large number of old persons take up their abode, might be high, and yet the place might be in a very unsanitary state. Still it is a good feature when persons die at a ripe age; and in the case of towns not much affected by emigration or immigration, the mean age at death is a truer indication of the condition of public health than the test afforded by the ratio of deaths to the living. According to Mr. Chadwick the mean age of the living in healthy districts was to that of the persons dying as 3 is to 4. On the other hand he found that in healthy districts the age at death was under the mean age of the living.

It would appear that, on the whole, the mean age of the population is the factor upon which we can most rely as a test of the public health. When the mean age, both of the living and the dying, is high, we can have no doubt as to the satisfactory hygienic surroundings of the people. It is satisfactory to find that the age

of the population of Dublin* is increasing, though that fact may merely be the result of an exodus of a large relative proportion of the younger citizens, not compensated by an immigration of persons of corresponding ages.

It would enable us to compare fairly the sanitary condition of districts if it were found practicable to publish the following statistical details, not necessarily weekly, but in the form of an annual report:—The number of the population; number of persons per square mile; the average valuation of dwellings and the number of persons per house; ratio of deaths—1st, to total population; 2nd, to native population; 3rd, to immigrant population; 4th, to males; 5th, to females; 6th, to children under 1 year old; 7th, to persons at each quinquennial period—the mean age of the population; the mean age of the dying; the occupations of the deceased, arranged in certain classes.

The collection and publication of statistics so elaborate as those above indicated would require a large staff of officials, and would cost the state a considerable sum yearly; but the results would justify the expenditure, especially if, in connexion with the registration of death, a better system of fully ascertaining the causes of it were concurrently put into force. The Dublin Sanitary Association might find a good outlet for their energy in agitating for an improved system of death and birth registration, for it is evident that the present mode of ascertaining these events and drawing useful general conclusions from them is, in Ireland at least, in several respects defective and inefficacious.

* In 1871 the population of Dublin City was 8,482 less than in 1861, and 12,043 less than in 1851. Yet, in 1871, there were in Dublin 39,290 persons aged 50 years and upwards, as against 37,097 in 1861, and 33,926 in 1851. This appears to indicate increased longevity of the people. In 1851 there were 151,549 persons aged from 5 to 35; in 1871, those between these ages only amounted to 138,046. It is persons under 35 who chiefly emigrate, and it is amongst such that mortality is least.

(To be concluded in next Number.)

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

THIRTY-EIGHTH ANNUAL SESSION.

Saturday, May 13, 1876.

GEORGE JOHNSTON, M.D., in the Chair.

MR. CROLY exhibited a specimen of multilocular ovarian cyst, and said: The woman from whom it was taken was between sixty and seventy years of age. About eighteen months ago an enlargement commenced in the region of the right ovary. The tumour gradually increased in size, and when she was admitted into the City of Dublin Hospital under my care she measured forty-four inches round the abdomen. The tumour was uniformly dull on percussion, with the usual clearness backwards towards the lumbar region. She suffered from irritability of the stomach, flatulency, and obstinate constipation. Dr. Kidd very kindly saw the patient with me, and she was afterwards seen by Dr. Macan, Obstetric Surgeon to the hospital. The question first was as to the nature of the tumour, and from the very distinct fluctuation high up and the solid feel low down, there could be very little doubt that it was a multilocular ovarian cyst. Dr. Kidd pronounced the uterus to be healthy and non-adherent to the tumour. The woman's circulation was not good; she had a weak-acting heart, but her lungs and kidneys were sound. The question arose as to operative interference. I made up my mind that, taking into consideration her age and her weak circulation, ovariectomy would not be attended with a reasonable chance of success. The poor woman had left the question as to the performance of the operation in my own hands, and said constantly to me to do whatever I thought best for her. I decided on leaving her alone. Dr. Kidd was strongly of that opinion, and also that if the tumour should increase so as to prevent her from going about, tapping should be resorted to. About

three months ago the tumour got so large that she could not go about the ward. I tapped her about an inch and a half below the umbilicus and drew off the full of a stable bucket of gruelly fluid. That emptied the large cyst on the right hand side, but left the cyst on the other side almost as large as before, and a solid mass in the lower part of the abdomen. At first she got great relief from the tapping, but afterwards the usual symptoms set in again of constant sickness in the stomach and a great deal of pain in the abdomen. The cyst refilled rapidly, and became almost as large as before it was tapped. She gradually wasted, got the haggard appearance that these ovarian cases usually present, and eventually sank and died. I decided on performing ovariectomy *post mortem* in order to demonstrate the steps of the operation to the clinical class, as well as to see what difficulties would have occurred if I had performed it during life, and to ascertain the relative position of the tumour and the viscera. I made the usual incision and reached the cyst with great facility. I got my hand in and found anterior adhesions very numerous, but they broke down readily. I tapped the left cyst and drew off a bucketful of gruelly fluid. I next enlarged the incision upwards and threw back the flaps so as to see the position of the tumour. The large cyst which I have here was so thin that some parts of it ruptured. The lower part of the tumour, as we anticipated, is very solid, and contains this gelatinous matter, which is almost like the white of egg. It is so solid that it will not come out by tapping or cutting into the cyst. What was of the greatest interest in the case was that at the upper part of the tumour, on the left side, coils of the small intestine were closely adherent to the tumour, so that I had considerable difficulty in detaching them. The left ovary was natural. The diagnosis was borne out as to its being a multilocular cyst. The patient suffered such severe pain at times in the abdomen, and we had to poultice and foment her so frequently, that I thought there must have been occasional attacks of peritonitis. If the operation had been performed during life there would have been great risk to the intestines adherent to the tumour, because, until I enlarged the wound so far that I got my hand round the tumour, and had slit up the walls of the abdomen so as to let the class see the tumour *in situ*, I did not anticipate the adherence of the intestines. In the last case in which I performed ovariectomy there, a portion of the intestine was adherent to the cyst.

The CHAIRMAN.—We feel deeply indebted to Mr. Croly for having brought forward this specimen, which is of very unusual interest. The adhesion of the intestines to the tumour must make us a little cautious how we suggest operations in cases of the kind. There is no doubt whatever that that circumstance would have presented a very material difficulty in removing the tumour during life. I take it for granted that

Mr. Croly made a larger incision in the *post mortem* examination than he would have done if the patient had been alive.

Notes of a Case of Abdominal Section and Colotomy for Intestinal Obstruction; Recovery. By SURGEON-MAJOR J. JOHNSTON, M.D., Dublin Hospital for Soldiers' Wives and Children.

OPERATIVE interference in cases of Intestinal Obstruction is usually had recourse to with great hesitation and anxiety, as it is generally impossible to form a correct diagnosis of its site and cause. If the symptoms of similar cases resembled each other with any degree of accuracy, this difficulty might soon be overcome, and early operation, in many instances of this most agonising and fatal affection, would then be considered more justifiable than at the present time. Hitherto it has been customary to delay operation until all the resources of the physician have been exhausted, and, when the patient's life has thus been placed in imminent danger from distension of the bowels or peritonitis, gastrotomy has been performed as a forlorn hope, and without much prospect of success. The late Dr. Brinton, in his valuable monograph on Intestinal Obstruction, forcibly expresses his views in discussing this subject. He says:—"It is hardly too much to say, that even the secure diagnosis, and the accessible seat, of an ordinary hernia, would permit the operation for its relief to be a somewhat debatable measure, were it customary to defer it to that stage of obstruction at which gastrotomy has hitherto been usually performed. Thus considered, I think the general question, 'Is gastrotomy justifiable in intestinal obstruction?' must be answered with a decided negative." His great objection, however, to "exposing a vast and delicate serous surface to an unnatural and dangerous contact with the air," has, of late years, been deprived of much of its value by the success which has attended the operation of Ovariectomy, and Dr. George Pollock* more accurately estimates the danger of this proceeding when he "urges the importance of early action when operative interference is indicated or offers a prospect of prolonging life, in all cases in which intestinal obstruction is the cause of threatened danger," as he believes that "the wound of the peritoneum is a minor evil," and that when death occurs "it is more probably the result of peritonitis than attributable to the effects of the knife."

The case I am now to narrate to this Society appeared, from its chronicity, to be one of those in which surgical interference should be deferred as long as symptoms of peritonitis did not manifest themselves, and the patient's endurance was compatible with reasonable hopes of recovery. This delay was rendered the more necessary, as, for some days, we were not quite unanimous in our consultation; but when the

* Art. on Foreign Bodies in Intestines. Holmes' Surgery. Vol. II., p. 707.

operation was performed no effused lymph was seen upon the peritoneum, although the intestinal convolutions were highly congested.

Mrs. H., thirty years of age, of fair complexion and short stature, was admitted into the Dublin Hospital for Soldiers' Wives and Children on the 25th of September last year. She stated that she gave birth to her second child on the 9th of June, and that, during the last five months of gestation, she had suffered from extreme constipation. Immediately after her confinement she was seized with intermittent pains in the vicinity of the umbilicus. The midwife who attended her, thinking they were after-pains, gave her two draughts, and subsequently a dose of castor-oil, but neither afforded much relief. Throughout June and July the constipation and abdominal pain gradually became worse, and her bowels were never moved unless by strong medicine. Towards the latter end of August the constipation became most obstinate, and the pains increased in severity and frequency. About this time the abdomen began to swell, and very little passed from the bowels afterwards. There had been no fæcal vomiting, but when the pains came on with unusual severity retching occurred.

On admission she complained of great tenderness and constant pain on the right of the umbilicus, and of intermitting pains of extreme intensity on the left of it. The abdomen was considerably distended and tympanitic, but not more so on one side than another.

With the recurrence of these spasmodic pains the umbilical region became very prominent and hard, apparently from vigorous peristaltic action of the intestines, the outlines of which could be distinctly felt by the hand; and when these passed off the abdominal wall relaxed into suppleness. She retched frequently. Her features were pinched and anxious, and her pulse small and 88 per minute. There was no thirst, and her appetite was excellent.

Linseed meal poultices and the subcutaneous injection of morphia relieved the retching very quickly, and one grain of opium was exhibited every third hour. In the evening a large enema was administered, but it brought away only a trace of fæces.

26th.—She passed a very good night. There is much less pain and tenderness, and the spasmodic pains return at longer intervals and with diminished violence. Pulse 86. Poultices and opium to be continued.

27th.—The spasmodic pains come on very seldom, and are very feeble. The fixed pain and tenderness are also much relieved. Administered a large enema with the long tube, but only two or three small scybala were seen in it. To continue poultices and opium.

29th.—Pulse 70. The acute symptoms have subsided, and she has had no return of the spasmodic pains for several hours. Is well under the influence of opium. Administered a large enema with the long tube, but could not pass the nozzle through the sigmoid flexure. The tube

passed in about eleven inches. A stream of water was thrown up for a long time, but it returned with no feculent trace in it. Gave her a large dose of castor-oil.

30th.—Placed her deeply under chloroform, and explored the abdomen carefully. Also examined per vaginam and rectum, but could not discover any abdominal tumour, and failed to find any solid accumulation of feces in the intestines.

For several days she remained very free from pain. Pulse about 70. She took three to six grains of opium in the twenty-four hours; galvanism and the long tube were also frequently used, but without any good result. During this time she was seen, in consultation, by several medical officers, all of whom agreed in advising the use of the long tube and opium.

By the 10th of October the pains had resumed their former violence, and could not be controlled by opium, morphia, or chloral. On the 18th she was seen by Drs. Banks and Kidd. Her abdomen was then greatly distended and tympanitic, but free from tenderness. Pulse 70. She was much wasted, but very cheerful. They tried to pass the long tube, but failed, as I had done. Dr. Kidd then suggested that the bowel should be explored from below by hand. I placed the woman under chloroform, and turned her over on her left side. Dr. Kidd then passed his left hand into the rectum, and upwards, as he believed, through the sigmoid flexure, into the descending colon; and, with his hand in that position, he grasped the nozzle of the long tube, whilst a stream of water was forcibly injected towards the transverse colon. The water did not seem to go much beyond his hand, and it soon returned as rapidly as it was thrown up. No feces came away. I need hardly say that the sphincter ani was much lacerated by this proceeding, but it healed very rapidly, and now performs its natural function satisfactorily.

On the 14th, 15th, and 16th, Surgeon Colles also saw her, with Drs. Banks and Kidd. On the 17th we found her so very much worse that we reluctantly decided, in the unavoidable absence of Mr. Colles, to make an exploratory incision. Her pulse was 120; temperature 101.2° F. The abdomen was enormously distended, and the agonising paroxysms of intestinal contraction and pain were of such frequent occurrence that it was quite evident she could not endure them much longer.

At 3 p.m. she was placed upon the operating table in a large airy room, the temperature of which was about 64°. Dr. Thomson, of the Richmond Hospital, kindly administered chloroform. Having emptied the bladder, I opened into the abdominal cavity by an incision which extended from the umbilicus to within an inch and a half of the pubis, and was probably about six inches in length. Several large convolutions of the small intestines, congested and tense with gas, immediately ballooned out. These were free from obstruction, but, on exploring the

abdomen, we found that the cæcum and ascending colon were enormously distended with fluid fæces; and as the transverse colon, which now appeared more clearly to be the site of the obstruction, was beyond our reach, we decided upon opening the cæcum, which was transfixed by a strong silk thread, and held in position, whilst the protruded intestines were replaced, and the upper part of the wound brought together. Then it was opened in the long axis of the tube by an incision about an inch and a half in length, and its margins were carefully stitched with strong silk sutures to the abdominal wall. Whilst doing this great difficulty was experienced in preventing the fluid fæces from flowing into the peritoneal cavity, but, after much delay, this was apparently prevented, and free exit was then given to the intestinal contents. The quantity of dark-brown, putrid, semi-fluid fæces and flatus that now, and for several successive days, escaped from the opening, it would be impossible to form any idea of.

On removal to bed her temperature was 100°, and pulse 120. Morphia was administered hypodermically, and iced water was given to allay the thirst caused by the chloroform. At 8 p.m. her pulse was 130, and temperature 100°. Had occasionally a slight paroxysm of pain, which was followed by a profuse discharge from the artificial opening; she also retched a few times. One-third of a grain of morphia was then injected under the skin. At 11 p.m. she had little pain, and the retching had ceased. A cupful of arrowroot and an ounce of brandy were now given; the hypodermic injection of morphia was repeated, and iced water continued as a drink.

18th.—Slept occasionally during the night. Drew off urine at 4 a.m. Had taken an opium pill every third hour. At 8 a.m. pulse 124; temperature 102°; thirst abated. At 11 p.m. pulse 118, temperature 101°; very free from pain. Continue opium.

19th.—At 2 a.m. the pain became more severe; gave her a third of a grain "shot" of morphia, after which she slept till 8, when her pulse was 118, and temperature 101·6°. At 10 p.m. pulse 106, and temperature 101·2°. The urine, which hitherto had been clear, and was drawn off every five or six hours, now became turbid with mucus, and required the more frequent use of the catheter. This was the beginning of a troublesome cystitis, from which she suffered occasional relapses during her convalescence.

23rd.—Morning temperature 100·2°; pulse 96. During the day she had several violent attacks of abdominal pain. Evening temperature 100·6°; pulse 104.

26th.—All the sutures held well till to-day. Some that were loose were removed. To-day she passed, for the first time, from the artificial opening, healthy well-formed fæces.

28th.—Morning temperature 100·2°; pulse 90. Occasional slight

pains, followed by the discharge of old fæces. There is very great hardness around the artificial opening, and, apparently, complete adhesion has taken place.

29th.—Removed the remainder of the sutures. Pulse 94; temperature 100·6. In the afternoon she shivered, when her pulse rose to 112, and temperature to 103·2°. These rigors were followed by severe abdominal pain.

30th.—She shivered again over night. 10 a.m.—Pulse 106; temperature 103°. The left side of the open cæcum had apparently slipped its attachment to the abdominal wall, but above, below, and to the right, the adhesion was remarkably good, although there appeared to be a great strain upon it. The rigors ushered in a sharp enteritis, which, however, subsided in a few days under the free use of opium.

31st.—During the night she had severe and frequent pains, followed by a copious discharge of bloody mucus, similar to what is seen in acute dysentery. This came from the ileum. To-day we observed, for the first time, several damson and raisin stones and skins, and vegetable marrow seeds mixed with the fæculent discharge from the colon. She now told me that she had eaten quantities of damsons in August and the beginning of September, and that she always swallowed the stones. The vegetable marrows and raisins were consumed about the same time. In the subsequent treatment of this case I had to tunnel immense quantities of hardened fæces, in which numbers of these stones were entangled, out of the transverse colon.

November 1st.—Morning temperature 101°; pulse 88. From this date she was allowed a little solid food, with bitter ale at dinner; and by degrees she was advanced to the ordinary hospital diet. She was, however, a constant source of anxiety throughout her convalescence, as she took no trouble to masticate her food; and pieces of meat, tendon, or potato were often expelled from the opening in an undigested condition.

On the 7th (twenty-one days after the operation) she was able to sit up for five hours. Every day I threw large quantities of water through the artificial opening and anus, in the hope of re-establishing the communication with the natural outlet, but without success, nor could I pass the long tube more than eleven inches through either opening.

On the 26th Drs. Kidd and Banks saw her, when a final, but fruitless, attempt was made to overcome the obstruction by means of copious injections. She was subsequently given one-fourth of a grain of extract of *nux vomica* twice a day.

December 2nd.—Felt a sudden inclination to pass water, which she accomplished for the first time since the operation.

I kept her in hospital till the 2nd of February of this year merely to protect her against her indiscriminate appetite. There had been no

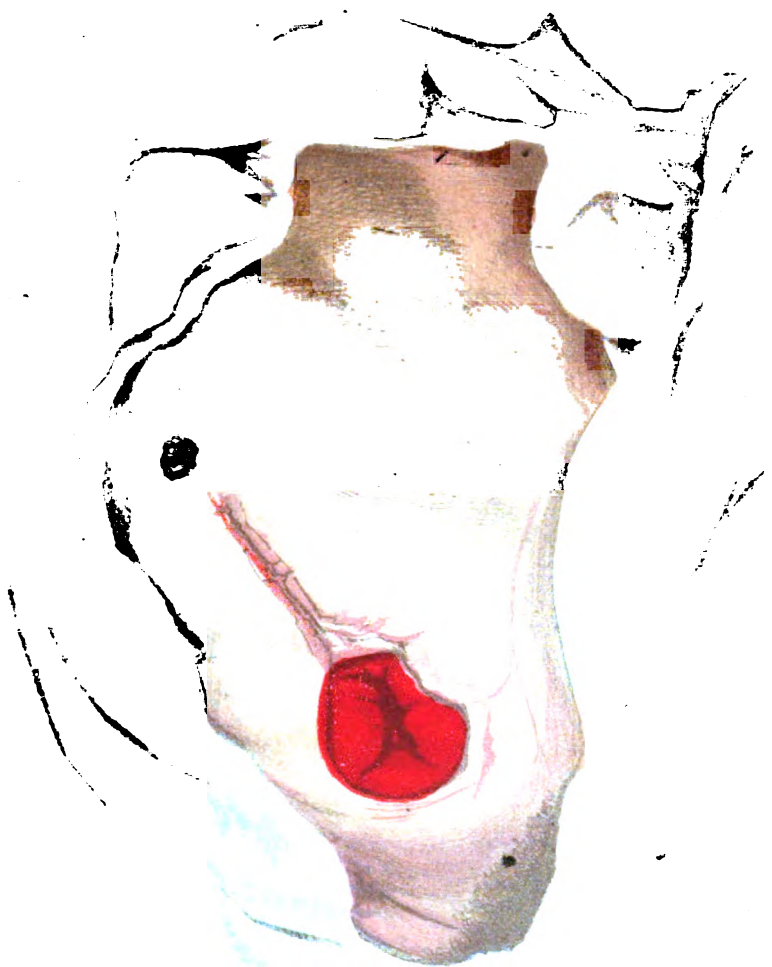
natural stool up to that time, but she was in robust health, and, although liable to slight flatulent pains, said she had not felt so strong and well for some years.

On the 29th of April she passed flatus per anum, and on the 1st of May a very hard stool by the natural channel. Subsequently she had slight diarrhoea, but since it subsided her bowels have been moved regularly every day, and no fæculent matter now comes through the artificial opening, even although it is as large as when she left hospital. The last free, natural motion she had was in the end of August, 1875, and then only after taking a purgative, so that an interval of eight months had elapsed before the obstruction was overcome and the natural channel restored.

On the 12th November, 1875, and 29th January, 1876, I had two drawings made, which respectively give a good representation of the artificial opening and the condition of the abdomen on these dates. In the former, reproduced in the accompanying engraving, the line of the abdominal incision and the position of the opening into the cæcum are well shown. When the patient lay in bed, the bowel was slightly everted towards its attached edges, and no tendency to prolapsus occurred, unless during active peristalsis, or when she sat up. The diameter from one edge to the other was about an inch and a half, but the laxity of the mucous membrane gave the opening a puckered, closed appearance, very like a small sea anemone in repose.

To obviate the tendency to prolapsus, prevent the opening from contracting too rapidly, and insure personal cleanliness, I devised a very simple and inexpensive appliance. It consisted of a plug of gutta percha, about two inches long, attached to the centre of a plate, eight inches square, of the same material. The plug was introduced into the opening, and the plate applied to the abdominal wall. A small binder kept it firmly in position. At first she required to remove it twice, but latterly only once in the twenty-four hours. Since the natural channel has been restored, this has been discontinued altogether, and contraction of the opening is being aided by firm strapping with adhesive plaster.

The history of this case points, I think, to a neglected constipation, during gestation, which ultimately passed into complete obstruction from the deposition of damson stones and other unsolved ingesta among the clayey fæces which had lain so long in the colon. On the 17th October, when we decided upon making an exploratory incision into the abdomen, we thought it highly probable that the obstruction existed in the transverse colon, but we were in doubt. There was so much tympany, and the cæcum, as we afterwards found, was so paralysed from extreme distension by liquid matters, that it did not afford us any positive evidence, by percussion or otherwise, of its loaded condition. What chiefly led me to prefer the anterior operation to Amussat's was, that when an



examination was made, per vaginam, during a paroxysm of pain, a loop of small intestine, tense and gorged, was forced down in front of the uterus. This was subsequently found to arise from extreme patency of the ileo-cæcal valve, which permitted a free return of the semi-fluid contents of the cæcum into the ileum. We regretted that the operation had not been performed two days sooner, before the peritoneum became congested; but even in this unpromising condition we felt it our duty to give her the only chance of life, as we had waited until all hope of a natural evacuation taking place had ceased, and there was now imminent danger from rupture of the intestine and peritonitis. We had, moreover, a hardy woman to deal with, whose hope of recovery never wavered, and who willingly gave her consent to the operation.

After the operation she was most tenderly nursed by Miss Williams, the Lady Superintendent, for many days and nights; and to her indefatigable care and watchfulness much of the ultimate success of the case is due. It was a most loathsome one from beginning to end, and by no means free from danger to others. One nurse suffered severely from septic poisoning, which resulted in large abscesses in the leg and axilla. I was similarly, although less severely, affected.

To Drs. Banks, Kidd, Thomson, Thornley Stoker, and several of my brother-officers, my best thanks are due for much valuable advice and assistance.

The temperature chart was carefully kept until she was thoroughly convalescent. At first the observations were taken in the vagina, but latterly in the cæcum, through the artificial anus.

She has not menstruated since the operation, but her general health is remarkably good, and her digestion is quite equal to the quality of food her humble means afford.

I may add, as this is passing through the press, that the menstrual function became re-established in the beginning of June.

DR. KIDD.—I saw this case which Dr. Johnston has so graphically described, and I felt very much indebted to him for allowing me the opportunity of seeing it. I do not know that I can add anything to his paper, except, perhaps, to speak of the great attention and care that he bestowed on the patient, to which, I believe, the woman owes her life. The case was one full of anxiety and difficulty. There was a long-continued obstruction, early vomiting, and, if I remember rightly, a scanty secretion of urine, great pain, and not much tympany in the first instance; and it was impossible to discover the exact cause of the obstruction. We made repeated and most careful examinations of the abdomen in order to ascertain the cause of the obstruction, but nowhere could we find a tumour. After having employed every other means we could think of, we tried the method of exploring the rectum described by

Simon Heidelberg. Dr. Johnston allowed me to pass my hand into the rectum. It was the first time I had ever attempted an exploration of the kind, and I was myself surprised—and I think those who looked on at the operation were surprised also—at the ease with which it was done, and at how easily the sphincter yielded to the hand. The woman was very fully under the influence of chloroform at the time. I carried my hand up as carefully as I could through the rectum and sigmoid flexure, and got it up, I believe, to the descending colon. It passed so far up that Dr. Banks, who had his hand on the outer surface of the abdomen, felt my hand in the left hypochondriac region. I passed my arm up nearly to the elbow into the intestine. I then passed a long tube up along my hand, and I think it must have gone some distance into the transverse colon. This method of exploration affords great facilities for making out the relations of the several organs of the abdomen, as well as the condition of the descending colon and rectum. It certainly proved in this case that colotomy, as ordinarily performed in the left lumbar region, would have been utterly useless, for it showed that the obstruction, wherever it was situated, was higher up than that. We arranged to put the woman under chloroform on another day, in order to try if we could make out the condition of the ascending colon, but we could not in any way satisfy ourselves as to the condition of that intestine. We could detect no tumour, either in the region of the ascending colon, or in that of the transverse colon. We did not even succeed in detecting that it was full of fæces. The whole abdomen was at this time distended and tympanitic. Under the circumstances Dr. Johnston, Dr. Banks, and I, fully concurred that the only thing that could be done was to open the abdomen at the linea alba and seek for the obstruction. When the abdomen was opened, the whole course of the small intestine was carefully traced. I believe the whole of the small intestine was passed through the fingers. There were many circumstances in the case which made one inclined to fear that the obstruction was in the small intestine. The early vomiting, the late period at which tympany set in, and the rather scanty secretion of urine, all pointed to the inference that the obstruction was high up. Dr. Barlow, who some years ago investigated this subject very fully, enumerated those symptoms as indicating that the obstruction was high up in the intestine. We found that we were able to trace the small intestine as far as the cæcum, and it was perfectly clear that the obstruction did not exist in it. The cæcum was found full of fluid fæces, which also showed that the obstruction did not exist above it. Dr. Johnston passed his hand very carefully into the abdomen and traced as accurately as he possibly could the course of the colon, and yet the seat of the obstruction was not discovered. He allowed me also to pass my hand into the abdomen, and I also traced the colon without finding the seat of the obstruction. We did not persevere—and

I think Dr. Johnston was perfectly right in doing so—in this protracted examination to ascertain the seat of the obstruction. We had quite sufficient facts to prove to us that the intestine was open as far as the cæcum, and we saw plainly that we could open it, and, in that way at all events, restore a passage through the most important part of the intestinal canal. It required a good deal of traction to draw the cæcum sufficiently forwards and inwards to attach it to the abdominal wall. However, it yielded to the traction, and no injurious results ensued from that. The whole history of the case, I think, is full of encouragement. I do not think that any man who saw that woman could have doubted that she would have died in the course of a few hours if this operation had not been performed. I believe that if ever surgery saved a life it saved hers, and that we must regard it as an important triumph of surgery, and one of which Dr. Johnston may very justly be proud. I think the result ought to encourage us to operate in such cases instead of allowing the patients to sink.

DR. HENRY KENNEDY having listened most attentively to this very interesting case, thought that, taking a hint from one lately published by Dr. Foot, aspiration of the intestine might have been of use. The tympany had been described as very great, and it must now be assumed that no real stricture existed. Under these circumstances, the plan he spoke of would have been justified, and the drawing off the air might have enabled the intestine to recover its tone. He had seen several cases similar to the one so well detailed, and the most of them had recovered, after having been, as it were, at death's door. In one such—a boy of fifteen—foreign bodies (the stones of fruit) had passed, and from that out the patient began to recover, but the recovery was very slow, and, during it, severe griping pains continued to be felt, just as in the case given by Surgeon-Major Johnston. Had aspiration been known some years ago, as it was now, he would certainly have tried it, for the cases he had alluded to were of a similar character to the one detailed this evening. The combination he had found most useful was opium joined with belladonna.

DR. BANKS.—I watched the case stated by Surgeon-Major Johnston with extreme interest, and I believe that if the woman had not been operated on her hours would have been numbered. In answer to the observations of Dr. Kennedy, I may observe that at no time was there very great tympany. The remedy he recommends—belladonna—which I know from experience to be of very great value, was fully tried in this case. Every possible means that could have been employed was used before the operation was resorted to. I have only to say that I never in all my life witnessed a case in which the medical attendant threw his

whole heart and soul more entirely into it than Dr. Johnston did into this; and I believe that to his untiring exertions the woman owed her life.

DR. KIDD.—The obstruction had existed for twenty-eight or twenty-nine days before tympany occurred to any great extent, and that was one of the reasons that made us apprehensive that the obstruction was situated high up in the intestinal canal. I brought forward a case some years ago, which was seen by Dr. Gordon and the late Dr. Beatty with me, in which I tapped the colon, and the effect was that the bowels resumed their action, and as long as the patient lived she continued to pass *fæces*. There was nothing in the circumstances of the present case to induce us to tap the colon.

SURGEON-MAJOR JOHNSTON.—On opening the abdomen in my case we found that the tympany was in the small intestines, which almost all protruded. The colon itself was free from gaseous distension. I omitted from my diary of the case a great deal of the treatment I pursued. Amongst other things I tried Murchison's plan of belladonna applied externally. At the suggestion, I think, of Dr. Banks, we also tried it internally in combination with opium. From what I saw of the case I prefer opium alone. The only similar case I have found recorded was one under the care of Dr. Clements, of Shrewsbury, in which 186 plum stones were passed by a patient, who lived two years after having been operated upon.

The Society then adjourned.

ACTION OF THE SALTS OF BILE ON THE RESPIRATION AND CIRCULATION.

MM. FELTZ and RITTER have published their researches into the action of bile in lowering the pulse. They injected into the blood of dogs:—(1.) Pure bile, which caused remarkable diminution in frequency of pulse, and lowering of temperature and of arterial tension, and slowness of respiration. (2.) The colouring matters only of bile and ethereal solutions of cholesterine; no result followed. (3.) The biliary salts only—*i.e.*, the tauro-cholate and glyco-cholate of soda; the same results were observed as when pure bile was injected. **MM. Feltz and Ritter** believe that the bile salts act, not upon the nerves, but upon the blood, in depriving the red corpuscles of their crystalline substance, the hæmoglobin, and in promoting their dissolution. They suggest that hypodermic injections of tauro- and glyco-cholates of soda might be tried with good effect in cases in which digitalis is now employed.—*Montpellier Médical*.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—HENRY KENNEDY, M.B., F.K.Q.C.P.

Secretary—E. H. BENNETT, M.D.

Aneurism of the Aorta.—MR. FOY said: This specimen was obtained from a subject in the anatomical room of the Carmichael School of Medicine. It is an example of an aneurism embracing the whole of the arch of the aorta, and the thoracic artery, and pressing downwards the diaphragm.

The thoracic portion in its vertical measurement is nine inches, and transversely six inches; antero-posteriorly its greatest measurement was four inches and a-half. It is of the compound variety, the arch and superior third of the thoracic portion forming a true or fusiform aneurism, the inferior two-thirds of the thoracic portion having a sacculated aneurism formed at the expense of its posterior wall.

The pressure of the sacculated portion upon the dorsal vertebræ produced erosion of their anterior surfaces from the sixth to the ninth, or apparently so, for, on sawing through the pedicles of the dorsal vertebræ, I found the seventh dorsal vertebra had escaped the effects of the pressure, having been displaced backwards, and it projected into the spinal canal, producing considerable pressure on the spinal cord, and flattening it out, so that its antero-posterior measurement did not equal one-third of its lateral.

On making a vertical section of the bone I found it to be perfectly healthy.

When removing the deep muscles of the back for the purpose of opening the spinal canal, I came upon a sac formed by the muscular tissues, and containing about four ounces of blood coagula, which evidently was formed by blood escaped from the aneurismal sac having passed under the margin of the last rib, and was retained by the dense structures in this position.

On opening the thorax I found the heart more to the left side than usual, and protruding forward, so that it came forward on raising the sternum.

Placing the subject on its face for the purpose of examining the posterior mediastinum, I came on a large quantity of coagula measuring about twenty ounces, and on examining the aneurism, found its opening to be situated on its posterior inferior margin, and to the right side.

The porter remarked that the subject had taken a double quantity of

injection stuff ; the reason of this now became apparent, for on slitting open the sac of the aneurism we found this cast of its interior ; it weighs two pounds and a half, and its roughness posteriorly beautifully exhibits the appearance of the eroded vertebræ.

The vessels of the right side were considerably enlarged—namely, the subclavian and carotid ; the corresponding vessels of the left side were rather less than usual in size. The enlargement of the pneumogastric nerves was very evident to the whole class, but on microscopical examination, which Dr. R. J. Harvey kindly made for me, it was found that the hypertrophy consisted wholly of an increase of white fibrous tissue, the proper nerve structure having been rather atrophied ; an artery, as you may observe from this section of the left pneumogastric, ran in the substance of the nerve. The vena-azygos major has been obliterated by the pressure of the aneurism ; unfortunately, the dissections had proceeded too far to enable me to trace the mode of termination of the intercostal veins.

The heart is atrophied ; the weight of it, with the origins of the aorta, pulmonary artery and termination of the two cava, weighing only seven ounces and three quarters of an ounce.

Throughout the whole course of the aorta there are found longitudinal deposits of calcareous matter.

The diaphragm is firmly adherent to the anterior surface of the aneurism, so that I have been unable to separate it without cutting into the arterial wall.

Unfortunately, I possess no history of the case. The subject was a male, the muscular structure apparently well nourished. There was no trace of syphilis.—*January 29, 1876.*^a

Fracture of the Spinal Column.—DR. T. E. LITTLE said: The present specimen, which I desire to offer to the notice of you, Sir, and of the members of the Pathological Society, consists of a part of the spinal column and cord of a man who died on the sixth day after an accident which resulted in the fracture of his back, of his skull, and of one of his legs. He had been previously a healthy and strong man, aged thirty-two. On the 28th January, 1876, while engaged in the work of removing some scaffolding from a building in the course of erection, an enormous beam of timber attached to a crane, underneath which he was stationed at work, and of at least a ton weight, fell upon him, in consequence of the breaking of a supporting chain ; it fell upon the back of his head and shoulders, he being stooping at the time, and then (knocking

^a Since the meeting of the Society on the above date, I learned the following particulars of the case:—The man was a patient in one of the city hospitals, was admitted about ten days prior to his death, complaining of lumbar pains, and suffering from paraplegia.

him aside) fell across and fractured his left leg near the ankle. After the immediate shock of the injury he regained momentary consciousness for a very brief space of time, and then subsided into entire unconsciousness.

He was directly conveyed to Sir Patrick Dun's Hospital, when the following condition of things was verified:—He was quite unconscious then, giving no response to efforts to arouse him, but not insensible, except in the lower half of the body, tossing about his arms and head violently when elsewhere irritated. There was no external abrasion, except a slight and superficial scalp wound over the left parietal region. A fracture of the left leg existed close to the ankle-joint. There was a slight protrusion of a couple of the vertebral spines in the dorsal region, which examination made out to be those of the seventh and eighth dorsal vertebræ, but no ecchymosis in the neighbourhood; he had complete paraplegia and anæsthesia of the lower extremities, the insensibility of the nether limbs being evidenced by his entire insensibility of the necessary manipulations employed in the diagnosis and splinting of the fractured leg, while he, at the same time, exhibited acute unconscious sensation of any irritation of the upper regions of the body. There was slight facial paralysis on the right side, but not general hemiplegia. The pulse was slow—52 per minute, and small. The respiration was shallow, but not unusually diaphragmatic.

On the evening of the injury he remained unconscious and incapable of being aroused, but was troubled and restless, tossing about the upper limbs and head greatly. The urine, drawn off by the catheter from the bladder, which, from its full state and entire absence of expulsive power, showed itself to be obviously paralysed, was of healthy appearance and of acid reaction. There existed a condition of partial priapism.

In the after-progress of the case little change took place in the symptoms, except in the characters of the urine, which rapidly became alkaline, turbid, and full of mucus, and, on the day before death, bloody. The pulse remained slow—averaging about 52, and had markedly the irritable quality, mounting to double that number on elevating the patient's body. The temperature rose slowly and regularly, but never to any great elevation—101.5° (F.) being the highest observation noted on the day of death. The pupils were dilated, insensible to light, and unequal—the right remaining permanently the larger. The respiration was throughout very shallow, and eventually assumed somewhat of the cerebral character, the cheeks and nostrils flapping, and slight stertor accompanying it. The paralysis of the face became slightly more marked, but was unassociated with general hemiplegia. I am of opinion that the protrusion of the vertebral spinous processes—never very great—had decidedly decreased before death.

The patient died on the morning of the sixth day after the accident.

He died of symptoms of cerebral oppression, unconnected with the spinal injury.

At the *autopsy*, which I made on the day of death, I found the following to be the condition of the spinal injury:—The back was broken at the level of the ninth dorsal vertebra. Some deep-seated blood-effusion existed outside the spinal column in the neighbourhood, both posteriorly in the substance of the dorsal muscles, and anteriorly in the mediastinum. The interspinous and supraspinous ligaments between the eighth and ninth dorsal vertebræ were completely torn through, and the anterior common ligament in the same situation in front was partially ruptured. A separation of the bodies of these two vertebræ from one another had taken place, associated with an oblique fracture, running downwards and forwards, of that of the latter, thus breaking off its upper and anterior angle. In addition, the transverse processes of the ninth dorsal vertebra were both fractured, as well as the transverse process of the tenth upon the right side; there is also a fracture, without displacement, of the lamina of the ninth vertebra upon the right side. Thus, the injury, though in general remarkably symmetrical, was slightly more extensive upon the right side.

The displacement was plainly that which ordinarily occurs—viz., that of the upper fragment of the backbone forwards upon the lower, the agents in the nipping of the cord in such cases being the arch of the vertebra above, and the body of the vertebra below, the site of fracture. In this case, as examined at the period after the injury at which death occurred, the displacement, and consequent narrowing of the spinal canal, was but slight.

Nevertheless, the resultant destruction of the spinal cord was very extensive and complete. A considerable quantity of coagulated blood was present in the spinal canal, in the situation of the fracture, both outside and within the theca. The spinal cord itself was hopelessly crushed for the extent of a couple of inches at the portion of it corresponding to the bodies of the eighth, ninth, and tenth dorsal vertebræ; the principal nipping, however, having occurred between the body of the ninth and the arch of the eighth vertebra. For almost the entire extent of the piece of the cord above named it is reduced to a disintegrated mass of broken-up nerve tissue and blood. The extreme degree to which the cord had been originally nipped is proved by the fact that the roots of the ninth dorsal nerve, as they spring from it, have been on both sides torn sharply across, almost as if cut with a scissors.

Remarks.—It is interesting to observe, I think, in this case the extreme amount of laceration which the cord had suffered, when taken with the comparatively small extent of the eventual displacement of the bones, and the slight permanent narrowing of the canal. This extensive injury to the medulla evidently occurred at the very moment of the accident,

the extreme elasticity and the strength of the connexions of the parts of the column permitting it subsequently to recover more or less its normal altitude; and, as I have already mentioned, I believe that, in the after-progress of the case, the displacement became even less than at first. This condition of things, which is a not uncommon event in fractures and other injuries of the spine, where we have extensive and complete laceration of the cord altogether out of proportion to the amount of separation or displacement of the bony parts, forms a consideration of great importance in its bearing upon the question of trephining the spinal column. In a case of fracture of the spine presented in the year 1847 before this Society by Dr. J. M'Donnell, he has especially noticed in like manner the disappearance of the protrusion of the prominent spinous process in the course of the case. He says:—"A remarkable change took place also in the relative positions of the displaced parts, the projecting spinous process having fallen very much into its natural position, so as to render it difficult (had not the fact been well established at an earlier period of the case) to believe that there had been a fracture at all."

It was mentioned that in the present case the transverse processes of the ninth, and one of the same processes of the tenth, vertebræ were also fractured. The mechanism of this, which is not a very common association of the ordinary fracture of the vertebral bodies, I believe to be explained by the circumstance that the forcible bending forwards of the trunk carried forwards at the same time the ribs, and that these, by means of their strong ligamentous attachments, to the transverse processes in front, thus tore these off at their roots; and the direction in which they are broken—viz., downwards, forwards, and inwards—is just such as we should anticipate from this mode of occurrence of the injury.—*February 5, 1876.*

Fracture of the Skull.—DR. LITTLE, at the same time, exhibited part of the skull and the brain of the same patient, and observed: I have already remarked, Sir, that the patient, whose spinal column I have just laid before the Society, did not die of that injury, but of an associated injury to the head, the exact nature of which is shown in these additional morbid specimens, taken from the same body.

The slight scalp wound, alluded to in the preceding report, did not lead down to any discoverable denuded or fractured bone; there was no depression or unevenness, or other sign of fracture, of the calvaria in any place; the patient had no hæmorrhage from the ears, nose, or elsewhere. Symptoms, however, of cerebral compression rapidly supervened, and with these he died. The slight period of lucidity of intellect after the accident, of transitory duration, suggested the diagnosis of intra-cranial hæmorrhage as the source of this compression. The partial facial

paralysis, unassociated with general hemiplegia, appeared a puzzling symptom; but it is readily intelligible in the light of the necroscopic examination.

Autopsy.—On raising the calvaria, and removing the dura mater, almost the whole surface of the anterior and middle lobes of the left cerebral hemisphere, both above and laterally, was found to be extensively covered by a moderately thick layer of blood-clot, situated both in the cavity of the arachnoid and beneath that membrane, and in some places dipping into the cerebral sulci. On searching for the source of this hæmorrhage, it was easily discovered in a rupture of the cortical grey substance of the front of the anterior lobe of the left hemisphere, a piece of the brain substance in this situation, of the size of a walnut, being broken up into a softened mass of mixed blood and brain tissue. A similar, but smaller, portion of the anterior tip of the middle lobe was in a like way broken up and disintegrated. The rest of the brain was unusually anæmic. The dura mater was intact, but the arachnoid ruptured in the situation of the first of these lesions.

On proceeding to examine the skull, after removing the dura mater, a fracture of the middle fossa on the right side and of its base was discovered. This fracture exists in the condition of a simple fissure without any displacement, or any rupture of the dura mater throughout its course; in fact, it was not perceptible until the dura mater was stripped up, having its course indicated by not so much as a discoloration of that membrane, and the brain in its situation being entirely free from laceration or abnormal appearance of any kind. Commencing, as a delicate crack, at the side of the middle cranial fossa, it descends downwards into that cavity, passes forwards across it, crossing the anterior termination of the lateral sinus, and thence, following the course of the inferior petrosal sinus, it terminates along the inner osseous wall of the cavernous sinus, and the sella turcica upon the right side. Externally, as this fissure crossed the lateral sinus, where this latter grooves the mastoid bone, it has broken through the stylo-mastoid foramen.

This fissure, it will be observed, is on the opposite side, and, in the chief part of its course, almost at the diametrically opposite point, of the skull-case to the situation of the cerebral lesion. This lesion, there can be little doubt, has occurred by a process of *contre coup*, or by the transmission of the force of the blow, which was evidently received upon the posterior part of the right side of the skull, through the cerebral substance, and the laceration of the most remote portion of this structure by its violent concussion against the anterior wall of the skull.

The involvement of the stylo-mastoid foramen in the cranial fissure accounts satisfactorily for the *local* facial paralysis.—*February 5, 1876.*

Fatty Degeneration of the Kidneys.—DR. J. W. MOORE said: These specimens illustrate fatty degeneration of the kidneys, attended with concentric hypertrophy of the left ventricle of the heart. The parts were removed from the body of a man, sixty years of age, a shoemaker by trade, who was admitted into the Meath Hospital on the 28th of January, and died on the 1st of the present month. His clinical history is easily told. He stated that he always had a short cough, but that in other respects he enjoyed good health until the middle of last December. A closer examination of his case, however, revealed the fact that he had suffered from severe headaches at times during the last three months. About the middle of December he noticed that his feet and ankles had begun to swell, his attention being directed to it by the fact that he was unable to put on his boots. The swelling increased, and there was also a puffiness under the eyes. Ten years ago his right ear became deaf, and on the 27th of last January his left ear became affected. His sight was also very defective, and he stated that during two or three days previous to his coming to the hospital he had seen flashes of light before his eyes. His complexion was pasty and anæmic-looking. A physical examination of his heart showed that it was healthy. On the 29th of January—namely, this day week—there was much œdema of the lumbar region of the right side, which was that on which he had been lying. Simultaneously with this he complained of great pain in the pit of the stomach. At four o'clock a.m. he was seized with an intolerable headache, which was chiefly frontal. The same morning his mind began to wander; he was restless and feverish, his pulse being 112. At two o'clock p.m. he lost the power of speech, failed to recognise his wife, and tossed about in the bed. He did not pass water that day until seven p.m., when a good deal came after an ineffectual attempt to pass a catheter. The cause of this was found to be an enlarged prostate gland. Towards night he became very delirious. Next morning he was much worse. His pupils were remarkably contracted; his tongue heavily furred; he was unable to speak, and there was a heavy typhous odour from his breath. His bowels acted once, and some rather smoky urine passed. At six p.m. he was rather clearer in his mind, but at times was semi-convulsed. A catheter was again used, but failed to pass into the bladder, chiefly because when the attempt was made to pass it he immediately discharged the contents of the bladder and rectum into the bed. There was a heavy fœtor from his breath, skin, and fæces. He died at ten o'clock on the following morning. Seven hours afterwards—namely, at five o'clock in the afternoon—*rigor mortis* was well marked. His liver was found to be remarkably enlarged, and several markings or crimpings were found at the lower edge. The peritoneal covering was at the same time thickened and opaque, an evidence of subacute or chronic peritonitis. A microscopical

examination shows that, to a considerable extent, the liver has undergone fatty degeneration. It is considerably larger than a healthy liver. The left kidney weighs six and a half ounces, and is eminently fatty in appearance. A microscopical examination revealed the presence of fat in all parts of the kidney. Towards its lower portion we find a remarkable encysted abscess, evidently of old standing. This seems to be the result either of scrofula, or of a more acute attack of nephritis supervening in the course of a fatty degeneration. The contents of the encysted abscess are largely composed of broken up renal structure. Numerous fragments of the uriniferous tubes are to be found in a state of granular degeneration, and there are also numerous oil globules and granular fat. The urine drawn off from the bladder had a specific gravity of 1016, was of a smoky appearance, and contained 75 per cent. of albumen estimated in a test-tube. It also contained red blood and mucus corpuscles and epithelium in considerable quantity, besides numerous tube cysts in all stages of fatty degeneration. The right kidney was not so large as the left, weighing only six ounces; but it presents the same appearances as the left kidney, with the exception of the encysted abscess. At the lower part of it there was what appears to me to have been originally a hæmatoma, the contents of which consisted of blood altered and gradually losing its colour. The spleen was very small, weighing but one and a half ounces. The heart was of normal size, weighing eleven ounces. The valves and chambers on the right side were healthy. Over the right auricle, as well as over the other parts, much superficial fat was deposited. The aorta was deeply injected. Here and there on its inner surface we find patches of commencing atheroma (*endarteritis deformans*), and just over the aortic valves the atheromatous deposits are even more marked. The mitral valve was somewhat dilated, and on it also were patches of atheromatous deposit. The left ventricle, viewed externally, does not seem to be much enlarged, but on section its walls prove to be considerably thickened. Their transverse measurements are—at the base, eight lines; at the centre, nine lines; and at the apex, where the normal dimension is three lines, they measure five lines. The right ventricle, to some extent, shares in this hypertrophy, the measurement of the wall at the middle being four and a-half lines. I think we may look on the case as one of chronic parenchymatous nephritis, terminating in fatty degeneration, and producing concentric hypertrophy of the left ventricle.—*February 5, 1876.*

Aneurism of the Descending Aorta.—DR. FINNY said: This specimen of aneurism of the descending aorta, close to and almost under the crura of the diaphragm, was removed from the body of a man who died in the City of Dublin Hospital on the 2nd of this month. He was a porter, thirty-four years of age, and was, on the 29th of last October, admitted under the care of Dr. Benson, suffering from a great deal of dorsal pain.

There had been no hereditary disease to account for the pain in the back, the only previous affection under which he suffered having been an attack of rheumatism two years before and an attack of syphilis. Last May he first complained of the pain, which he attributed to lifting heavy packages and weights. In the July following he was unable to sleep from the pain, which became more severe, and shifted at times to his left side. Still he continued working until he was admitted into the hospital. At the time of his admission he referred the pain to the lower dorsal region, and the anterior superior spinous process of the left ilium, the pain in the latter place shooting down along the course of the cutaneous nerves of the leg, and at times into the left testicle, but was at no time felt in the penis. He had no fever, his pulse was quiet, and his general health remarkably good. With rest, chloral draughts, and the application of a small blister outside the crest of the ilium, he remained in tolerable health and much the same condition for a month. At one time the symptom of the pain shooting into the testicle suggested the possibility of renal colic, or the existence of renal calculi. Mr. Tufnell and Dr. Wheeler saw him, and sounded him for stone in the bladder, but found none. Though carefully examined, no pulsation indicating the existence of an aneurism was complained of, or detected in the abdomen. On the 15th of November the pain was very great, being felt at the sacro-iliac synchondrosis, and it became generally worse towards evening and night, and was of a paroxysmal character. As several of the lymphatics in the groin were enlarged, and as the cicatrices on the penis indicated the possibility of a syphilitic tumour pressing on the origins of the nerves, it was thought well to put him under a course of mercury. This treatment, however, gave no relief. On the 6th of last December he had a slight fulness in the left inguinal region, and complained of tenderness there on pressure. The pain was worse at night and whenever he rose to go to stool. Hypodermic injections of morphia became necessary to relieve the pain. On the 14th of December the pain seemed to have left his back, for he complained no more of it there, and referred it entirely to his groin. All this time his temperature was within the normal limits, being about 98.4° , and his pulse also was natural. On the 29th of December the pain, which he had referred to his right inguinal region, passed away. He came under my care on the 9th of January, and had then fulness of the left inguinal region, and complained of an intense scalding pain at that region, which would last a considerable time after handling. So sensitive was his leg along the course of the cutaneous nerves that it became impossible to use much manipulative investigation. At this time a tumour could be felt, especially when his bowels were confined, parallel to Poupart's ligament, about five inches long by two in breadth, and which rolled plainly under the finger, and was otherwise movable. The handling of this tumour, as I stated before, caused a pain

which lasted for some time afterwards. On the 16th of January I examined him when standing up, and found neither pulsation nor tumour at his back, only an abnormal area of dulness in the lumbar region. The man was unable to stand erect, but stooped towards the side to which the pain was referred. There was no ascites. At this time, after large doses of quinine and aconite, he felt much relieved, and thought himself considerably better—at least, the pain was so much less that he thought himself considerably improved; but in a short time afterwards the pain returned. On examining his left side on the 20th, I found a pulsating tumour between the twelfth rib and the last dorsal spine. This was distinctly distensile in character. On investigating it further round towards the region to which the pain was so much referred, this pulsation could still be felt but very indistinctly, the point of maximum pulsation being at the back. On percussion dulness was found to extend as high as the level of the tenth rib forward to the anterior superior spinous process, and extending round to the vertebral column. It was now only too plain what the cause of all this pain was. No murmur could be detected on the most careful investigation, nor could any epigastric tumour be found. For a week this state of things went on without change, except that he looked paler and thinner, and his pulse became shabby and quick. The hypodermic use of morphia was constantly called for, and two, or two and a half grains, in divided doses of half a grain each, during the twenty-four hours, were required to give him any relief. On last Saturday, the 29th of January, about two o'clock, he was seized with an intense pain in the left groin, shooting down into the leg. His bowels failed to move, and he complained of awful cramps in his stomach, which were so bad that in the paroxysms of pain he ground his teeth. He was extremely blanched in the face, lips, tongue, hands, and feet, and complained of dulness of vision and a feeling as if he were about to faint. His pulse at the wrist, when I saw him at half-past four o'clock that day, were almost uncountable, polycrotous, and compressible, the rate being almost 140. On examining the heart I found only one sound over the whole area, which was abrupt and short, and accompanied with a pumping action of the heart. He vomited a little grumous matter once or twice. I thought he was dying then; but when I visited him again four hours afterwards I found him quieter and complaining of no pain save when his leg was moved. On the 30th his pulse was 130; and the second sound of the heart—I believe it was the first we had heard on the day before—was slightly audible. About five o'clock in the evening a "fit of the cramps," as he described it, came on, accompanied with much groaning and agony. He was still conscious, and complained that his water was very small in quantity, and that day he passed very little. On the following day there seemed to be some

improvement, for a little colour had returned to his lower limbs. All sensation, however, was lost along the anterior part of the thigh; but the inner and posterior parts of the thigh were sensitive to the touch, while at the middle part hairs could be pulled out without his noticing it, evidently showing that there was paralysis of the anterior crural nerves supplying that part. His temperature was 99.2° ; his pulse 120; and the second sound of the heart became still more audible. He had no pain in the back when he was quiet, nor over the crest of the ilium, where the pain was formerly so much referred to. On the morning of the 1st of February he was not so well. His forehead was bathed in perspiration, and he again complained of the cramps between the hours of nine o'clock and twelve. In the afternoon he complained of the pains rising to his chest, and his pulse again became thready; his face was still more blanched, and he died quietly about three o'clock. On a *post mortem* examination, made twenty-four hours after death, his body was found firmly contracted with *rigor mortis*. On cutting through the surface of the body, the skin, muscles, and lungs were all found to be perfectly bloodless. On opening the abdomen the descending colon was found permanently thrown a little to the right, and the sigmoid flexure was turned entirely to the right side by an enormous mass of a dark blue black colour, against which the white bowel showed in remarkable contrast. This large black mass or clot extended under the peritoneum to within an inch above Poupart's ligament, and quite to the anterior superior spinous process, and from that up to the diaphragm on the left side. The spleen was pressed close underneath the diaphragm, while the stomach and other viscera were pushed to the right side. On removing the intestines and the peritoneum, this large clot of blood, in which the kidney lay embedded, was necessarily removed with it. On turning, or cutting through the kidneys, the clot was found not to have extended to the back of the kidneys, but only in front, thus showing that the hæmorrhage followed the course of the peritoneum, and was reflected along the front of the kidney and behind the descending portion of the colon. A superficial clot had made its way to the mesentery of the rectum for a short distance. On removing the large clot we found another clot, even larger, separated from it by the fascia transversalis, the superficial clot passing over the kidney and lying on this fascia under the peritoneum, the deeper clot being in the substance of the quadratus lumborum, psoas and iliacus, over which the fascia transversalis was stretched so tight and hard as to give a sensation very unlike what might be expected from a clot of blood. Across this large, blue, tightly-stretched clot the external cutaneous nerve of the thigh was seen, while the anterior crural nerve was pushed inwards towards the brim of the pelvis. On carrying the fingers up to the left crus of the diaphragm and removing the superficial clot we found a large aperture

which led down to the second or deep clot. Here the communication between the two masses of blood must have existed. On opening the thorax, which it was necessary to do in order to see where the seat of the aneurism really existed, it was found that the thoracic aorta had a large aneurism dilated from its back part close to and above the decussating fibres and crura of the diaphragm, and extending to the right and still more to the left of the vertebræ. The whole left crus of the diaphragm, where the aneurism was formed underneath it, had disappeared and blended with the wall of a large aneurismal sac. On passing the fingers to the left of the mass, in which place only was any tumour to be felt, we came on several rough and ragged pieces of bone, which, on examination, proved to be bits of the two last dorsal and first lumbar vertebræ and the neck of the twelfth rib. The size of the aneurism can now be seen from the specimen. The aperture leading to the posterior sac is about two inches in length by one in breadth, and this evidently is where the vessel gave way first. It formed from the posterior wall of the aorta and then bulged backwards, not only directly but to the right and left. To the right it extended downwards under the diaphragm, and had almost opened into the pleural cavity. To the left it bulged downwards, but at the same time forwards, and made its way down under the quadratus lumborum muscle to the iliac fossa, and here it was that the first clot was found pressing up the fascia transversalis with the nerves, and in fact, I may say, taking the place of the iliacus internus and quadratus muscles, as none of the muscle was found on examining the clot. The bone was stripped of its periosteum. This aneurism had evidently existed for some time, and I believe such was the state of things as long ago as in last December. Thus, a large secondary false aneurism existed for some time, limited by strong fascia, and then, ten days ago, from it a diffused aneurism was produced by an opening which communicated between the peritoneum and the muscles close to the attachment of the diaphragm to the twelfth rib. On examining the twelfth rib we found the head separated from the neck and lying loose in the posterior sac, while the bone itself was stripped of its periosteum. It was rough to the feel, and its head was eaten through. The aneurism had made its way down under the psoas to the quadratus muscle behind it, and then made its way up behind the twelfth rib and ate its way in front of, as well as behind the rib. Behind, it absorbed the tissues so much as to have come quite to the skin, which we found to be the covering of the soft pulsating tumour detected on the 29th. The vertebræ, like the rib, show a good example of erosion, and the intervertebral substance appears, as is always the case, to have resisted the pressure much longer than the bones. The aneurism had almost opened into the spinal canal, a very thin partition only separated it from it. I was unable to get the whole vertebræ, but there is enough to show that

the portion of bone eroded was part of the two last dorsal vertebræ and the first lumbar. The case is interesting as establishing several points. It illustrates a point on which great stress has been laid by Dr. Stokes—namely, the disproportion between the constitutional disturbance and the intensity of the suffering, for until the last week the fever and temperature were hardly over the normal conditions, and all the other bodily functions, including those of circulation, respiration, and digestion, were healthily performed. A second remarkable point is that the occurrence of such severe paroxysms of pain, in which the man ground his teeth, should have occurred without setting up irritation and fever. A third point is that an aneurism may become diffused, and successive hæmorrhages take place, and several pounds of blood may be lost without death immediately resulting, when that bleeding is not into the peritoneal or pleural cavity itself. With these hæmorrhages, and the well-marked signs connected with the heart, such as the one sound and the pumping beat, it would have been utterly useless to have put the man on any regular diet, or to have adopted any therapeutical treatment; as when an aneurism forces its way backwards to the bones of the vertebræ, it is impossible that nature can repair it, the most favourable cases being those of a sacculated form, and springing from the anterior surface of the vessel.—*February 5, 1876.*

ERRATA.

In the July Number of the Journal, Proceedings of the Pathological Society, the following misprints require correction :—

Page 62, line 4 from bottom, for "long" read "bony," and so *passim* throughout Dr. F. W. Warren's communication. Page 63, line 23 from top, for "long large" read "large bony."

Page 73, line 20 from bottom, in the heading of Dr. E. W. Collins' communication, for "*Peritonitis*" read "*Periostitis*."

E. H. B.

CLINICAL RECORDS.

CORK-STREET FEVER HOSPITAL.—*Case of Malignant Enteric Fever.* Under the care of DR. GRIMSHAW.

THE following case presents some features of interest, especially when compared with that published by Dr. J. W. Moore in *The Dublin Medical Journal* of May last.

I prefer the term "malignant" to that of "acute," used by my friend, Dr. Moore, as a prefix to the term "enteric" in describing this form of fever. In using the word "acute" it must not be forgotten that its nosological converse is "chronic," and further, that all forms of fever are acute. We are accustomed to use the word "malignant" as a qualifying expression when writing or speaking of quickly fatal cases of scarlatina, small-pox, typhus, &c., and I think it well to adhere to this term under similar circumstances in enteric fever.

I have met with several other such cases as the following, and have a special recollection of one which occurred in the case of a policeman in Dr. Steevens' Hospital, where the *post mortem* appearances were very similar to those found in the present case.

I think it not improbable that many of the cases described as "puerperal peritonitis" may be of this character. Thus I have met with two cases of well-marked enteric fever in puerperal women where the first symptoms of the disease made their appearance, about forty-eight hours after delivery; they both terminated fatally within short periods.

William B., a groom, aged forty, unmarried, recently employed in Dublin, went to England for a short time, where he was employed at various occupations. He returned to Dublin about the 6th of May, and went to lodge in Quinn's-lane. His landlady states that he appeared to be in good health on his arrival, and remained healthy until the evening of Tuesday, the 9th, when he said he felt ill, got a pain in his abdomen, and vomited. On Wednesday, the 10th, he was much worse, seemed weak, complained much of pain, and was wakeful and restless during the night. On the 11th he was seen by the dispensary medical officer, who directed his removal to Cork-street Hospital, where he was admitted on the evening of the 11th. Temperature 102·6°; pulse 100. Extremities cold. Ordered—wine, 6 ozs., and hot jars to feet.

May 12th.—I first saw him upon this day. Had been raving all night, and slept "scarcely any." Bowels had been moved twice; discharges

pale and watery. Had vomited some brownish tenaceous matter, which I did not see. Temperature 102° ; pulse 64, very small and weak; respiration 40. Extreme tenderness over abdomen; flatulent distension. Tongue dry, brown in centre, the brown surrounded with thick white fur; edges and tip red. Legs drawn up. Face anxious and sunken. One spot on abdomen. Diagnosis—enteric fever with peritonitis. Ordered—tincture of opium, 15 minims, every third hour; whiskey, 6 ozs., to be given in dessert-spoonful doses, largely diluted with water; lime-water and milk *ad libitum*, and turpentine stupes over abdomen. He continued delirious during the day and following night. His bowels were moved twice in the afternoon. Evening temperature, 97.3° ; pulse, 93.

13th.—Died at 9 a.m. Dark spot and patches appeared on skin before death.

Post mortem examination, six hours after death.—Cadaveric rigidity well marked; body still warm, and giving off offensive smell; large purpuric patches over back and sides; abdomen swollen. The abdominal cavity was found filled with a considerable quantity of yellowish-brown turbid serum, free from fæcal matter; all the coils of intestine were glued together with soft cream-coloured lymph; in some places this lymph was deposited in large masses, like false membranes; the great omentum was extensively congested, covered with lymph patches, which were easily removable, and adherent to all neighbouring parts; the intestine was congested on its serous surface through its whole length; the other abdominal organs seemed healthy, but their peritoneal coverings were all congested, covered with lymph patches, and glued to neighbouring parts; there were several enlarged mesenteric glands. On opening the intestines, the lower part of the small intestine and cæcum were found congested; some of Peyer's patches seemed to be superficially ulcerated, many were congested, but none presented the naked-eye appearances of enteric fever. There was no perforation of the intestines.

Dr. Bookey has made a careful microscopical examination of the abdominal fluid and of the interior of the intestines, and reports that the abdomen contained large numbers of micrococcus spores, similar to those described by Dr. Klein in the Report of the Medical Officer of the Privy Council. The inner surface of the intestine presented a few spots of superficial ulceration over Peyer's patches. The Peyer's patches towards the lower end of the ileum presented the "shaved beard" appearance; microscopic examination of these patches presented nothing beyond those conditions usually met with in enteric fever.

DR. STEEVENS' HOSPITAL, DUBLIN.—*Case of Angeioleucitis.* Under the care of DR. GRIMSHAW. Reported by MR. FOX, Clinical Registrar to the Hospital.

JAMES MURPHY, aged twenty, a member of the Royal Irish Constabulary, was admitted on the evening of January 4th, 1876, apparently suffering from the effects of a feverish cold and a slight attack of tonsillitis.

On January 23rd, 1876, having been attacked with rigors and other feverish symptoms, he was transferred to the fever ward. On examination, his temperature was found to be 100° , and towards evening it rose to 101.6° . At this time the cheeks assumed an erysipematous appearance, but differed from true erysipelas, inasmuch as the blush occurred in slightly raised patches, closely simulating erythema nodosum. Two days subsequently to this the patient felt severe pain in his legs, and similar red patches to those on the face now appeared on the anterior surface of the legs. The lymphatics of the leg now became swollen, painful, and exceedingly tender to the touch, their course being marked by superficial redness, under which the chain of glands could be distinctly felt. The patient was considerably depressed. The legs were wrapped in cotton wool, and the pain becoming intense, he was ordered a quarter of a grain of opium every third hour, and opium liniment to be applied over the inflamed parts. One week after this the right arm became affected in a similar manner to the legs, the left following in a short time.

February 23rd.—There was a good deal of gastric irritability, with occasional vomiting, for which he was ordered lime-water and milk. The pain in the limbs had now almost subsided, but pain was produced by pressure over the region of the spleen; this was found on percussion to be enlarged. The patient was now very anæmic and weak, and was ordered 8 ozs. of wine daily. The skin was dry and hard; tongue dry and coated, the margins being of a red colour. The expression was dull and listless.

The spleen still enlarged; tenderness on pressure is not now (March 1) limited to the spleen, but extends over the whole abdomen, but without rigidity or tympanites. This gave rise to no inconvenience except on pressure, and it was now suspected that the lumbar glands had become engaged in the disease. At this time the patient's blood was examined microscopically, and was found to contain an increased number of white corpuscles, together with bacteria in abundance.

March 17th.—All tenderness and pain have now disappeared, and the patient seems better. The temperature during the course of the disease varied from 100° to 102° , but never presented any periodical exacerbations. The patient is now able to be up.

April 5th.—On the evening of this date there was an elevation of the temperature to 103.8 , and on the next morning to 103.2° . On examina-

tion of the patient, there was found to be great pain and tenderness on pressure over the spleen and right hypochondriac region, and very severe pain was caused by coughing or any act which occasioned movement of the diaphragm. The pain was so intense that the patient got the nurse to tie a broad bandage around his abdomen, to restrain the movements of the muscles. There was also severe headache. He was then ordered quinine, but was only able to take two doses, as the stomach was very irritable, and vomiting ensued. The blood was again examined, but nothing abnormal was found.

April 7th.—Temperature, 103·3°. Pain and tenderness of the abdomen not so severe. This morning there was an acid smell coming from the patient, but no other symptoms of acute rheumatism could be observed. Diarrhœa now set in, but not being profuse, it was not checked until the 10th April, when he was ordered the following mixture:—

| | | | | | |
|--------------------------------------|---|---|---|---|--------|
| Dilute sulphuric acid | - | - | - | - | 3i. |
| Solution of hydrochlorate of morphia | - | - | - | - | 3i. |
| Water | - | - | - | - | 3viii. |

One ounce to be taken every third hour.

This had the effect of stopping the diarrhœa.

April 10th.—This morning dulness was detected over the right side of the chest, owing apparently to extensive congestion of the right lung. There was slight cough, accompanied by pain, over the region of the spleen. After a few days all these symptoms disappeared.

May 8th.—The patient is now permitted to get up every day, and is considerably improved. The temperature has been normal for some time past, and none of the previous symptoms are present.

May 15th.—Patient discharged from hospital this day.

Remarks, by DR. GRIMSHAW.—The foregoing case presents characters of great rarity, and I am not aware of any closely similar case having been recorded. In common with every hospital physician, I have met with many cases of localised inflammations of the lymphatic vessels and glands, but not with a case where the disease seemed to be so generally diffused. The erythematous inflammation on the face and legs appears to have been the origin of the wide diffusion of lymphatic inflammation. I have little doubt that the abdominal tenderness and pulmonary congestion were both accompanied by lymphatic inflammation in the abdominal and thoracic cavities. The nearest approach to this case which I have met with was one in Cork-street Fever Hospital, where *erythema nodosum* upon both legs was followed by inflammation of the lymphatics of both legs and some abdominal tenderness.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday,
June 17th, 1876.*

| Towns | Population in 1871 | Births Registered | Deaths Registered | DEATHS FROM ZYMOTIC DISEASES | | | | | | | Annual Rate of Mortality per 1,000 Inhabitants |
|--------------|--------------------------|----------------------|----------------------|------------------------------|---------|------------------|------------|-------------------|-------|-----------|---|
| | | | | Small-pox | Measles | Scarlet Fever | Diphtheria | Whooping Cough | Fever | Diarrhoea | |
| Dublin, - | 314,666 | 739 | 577 | — | 1 | 10 | 3 | 12 | 13 | 13 | 23·8 |
| Belfast, - | 182,082 | 551 | 340 | — | — | 4 | 1 | 9 | 9 | 3 | 24·3 |
| Cork, - | 91,965 | 219 | 181 | — | — | — | — | 4 | 5 | 7 | 25·6 |
| Limerick, - | 44,209 | 113 | 72 | — | — | — | — | 1 | 3 | 1 | 21·2 |
| Derry, - | 30,884 | 76 | 52 | — | — | 3 | — | — | — | 1 | † |
| Waterford, - | 30,626 | 65 | 59 | — | — | — | — | — | 1 | 1 | 25·1 |
| Galway, - | 19,692 | 41 | 32 | — | — | — | — | — | — | — | 21·1 |
| Sligo, - | 17,285 | 35 | 34 | — | — | — | — | — | — | 1 | 25·5 |

Remarks.

Except in the Sligo District, the rate of mortality shows a marked decline. That for Derry is wanting, because no return was sent in for the Glendermot District in the first week of the period. The death-rate was 20·0 per 1,000 of the population annually in London, 25·0 in Glasgow, and 21·3 in Edinburgh. In London the mortality declined from 21·6 in the first week to 19·1 in the fourth week of the period. Zymotic diseases were not very fatal—measles, in particular, was much less prevalent and fatal. Whooping-cough still prevailed in Dublin, Belfast, and Cork; while diarrhoea increased in Dublin and Cork. Of 80 deaths caused by zymotics in Dublin, 64 occurred within the municipal boundary. The mortality from respiratory affections continued to decrease, the deaths being 101, compared with 135 in the fifth four-week period. They included 66 from bronchitis and 24 from pneumonia, this latter disease being somewhat more fatal than previously. Phthisis caused 70 deaths.

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.,
for the Month of June, 1876.*

| | | | | |
|--|---|---|---|----------------|
| Mean Height of Barometer, | - | - | - | 29.983 inches. |
| Maximal Height of Barometer (on 10th at 3 p.m.), | | | | 30.320 „ |
| Minimal Height of Barometer (on 3rd at 3 p.m.), | | | | 29.520 „ |
| Mean Dry-bulb Temperature, | - | - | - | 57.7° |
| Mean Wet-bulb Temperature, | - | - | - | 52.7° |
| Mean Dew-point Temperature, | - | - | - | 48.1° |
| Mean Humidity, | - | - | - | 70.5 per cent. |
| Highest Temperature in Shade (on 20th), | | | | 75.8° |
| Lowest Temperature in Shade (on 10th), | | | | 42.9° |
| Lowest Temperature on Grass (Radiation) (on 14th), | | | | 39.1° |
| Mean Amount of Cloud, | - | - | - | 53 per cent. |
| Rainfall (on 14 days), | - | - | - | 1.260 inches. |
| General Direction of Wind, | - | - | - | W., S.W., N.W. |

Remarks.

June, 1876, was a singularly fine and uneventful month as regards meteorological phenomena. On the 1st an anticyclone lay over England and Ireland, but a falling barometer in the N. and N.W. ultimately brought broken weather and fresh S.W. to W. winds to our coasts. On the morning of the 9th a remarkable change in the distribution of barometrical pressure over Western Europe occurred—a brisk rise in the W. coinciding with an equally rapid fall in the S.E., and so establishing gradients for N. winds. On the 13th a local heavy fall of rain (.436 of an inch in four hours) occurred in Dublin and its vicinity. Showery weather prevailed during the following four days. On the 19th it became warm. Next day the thermometer at 9 a.m. marked 72°, and the maximum was 75.8°. A fresh but local gale from S. was felt for a few hours. On the 21st we had a narrow escape of a thunderstorm, as the sky was threatening, and a storm was experienced in Meath and along the N.E. coast of Ireland. The end of the month was very fine and mild, although the sky was generally overcast during the last three days.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

ELEMENTS IN THE DIAGNOSIS OF SYPHILITIC HEMIPLEGIA.

IN the "Notes of Practice" from the Bellevue Hospital, reported in *The New York Med. Rec.*, April 22, is given the case of a man, aged thirty-five, who was thought to have syphilitic hemiplegia for the following reasons:—1. Hemiplegia occurring under the age of forty, if embolism can be excluded, is presumably syphilitic, and the presumption increases in strength in proportion as the age grows less. 2. In syphilitic hemiplegia chronic headache is a prominent feature, both preceding and following an attack, and is usually worse at night. 3. Syphilitic hemiplegia almost invariably occurs without loss of consciousness. There was a doubtful syphilitic history in this case, yet no secondary manifestation could be traced. That fact, however, led to the *fourth* observation—namely, that where the nervous system is secondarily involved by syphilis, other secondary manifestations, such as roseola, sore throat, &c., &c., are only very slightly, if at all, developed. Again, if there is a second attack of hemiplegia soon after the first, but affecting the *opposite* side, it was believed to be almost absolute proof that the first attack was syphilitic.

ACCIDENTS FROM THORACENTESIS.

THE subject of the accidents which sometimes occur from thoracentesis has attracted some attention in the medical societies at Paris. This has suggested an article, to be found in the *Gazette Hebdom.*, February 11, 1876. Cases of sudden death after thoracentesis are rare. Three cases have been recently observed which may be attributed to emboli caused by the sudden removal of pressure on the lungs; but, as clots are formed and emboli occur in cases of untreated pleurisy, it is questionable whether the deaths can be fairly attributed to the operation alone; and also, if an earlier tapping, before the clots had formed, would not have saved life. Certain facts, mentioned by MM. Behier, Lionville, and Terillon, prove that death has occurred from the pulmonary congestion and œdema consequent on the removal of liquid in the thoracic cavity. In the three cases of death reported, however, the pleurisy was complicated by other pulmonary lesion, which, without doubt, acted as a predisposing cause. M. Tenneson has observed a dangerous asphyxia occurring during the operation of tapping, after removing but a small quantity of liquid (600 grammes), due in his opinion to sudden congestion of the lung. In this case pleurisy had existed four months. It is

probable, therefore, that the expansibility of the lung had been impaired by pseudo-membrane, and that the aspirator, in thoroughly evacuating the fluid, had induced congestion to fill the cavity which the lung was unable to fill by simple expansion. An early operation, and slow aspiration, to cease on the slightest distress of the patient, insure safety.—*N. Y. Med. Jour.*, May.

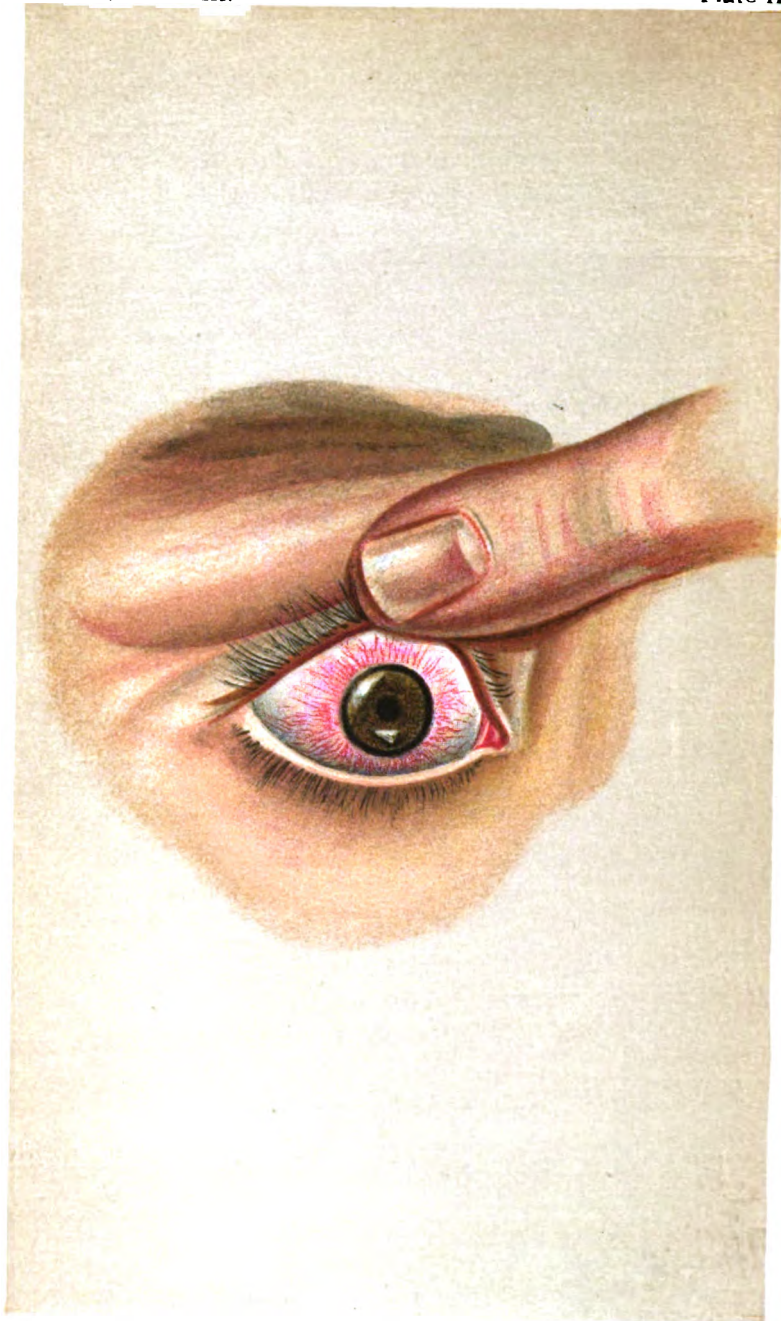
A SIMPLE METHOD OF TREATING TRANSVERSE FRACTURE OF THE PATELLA.

DR. EDWARD HORN BROOK reports three cases of transverse fracture of the patella, which he treated in the following manner:—The limb was placed on a straight posterior splint, with the heel slightly elevated, and the lower fragment was secured in an immovable position with adhesive plaster. Several strips of adhesive plaster were then placed lengthwise over the upper fragment, extending upwards about three inches over the anterior surface of the thigh, the free ends hanging over the patella. To these free ends a piece of strong twine was attached, and was passed over a pulley adjusted about two inches higher than the toes, so that a two-pound weight would hang clear of the bed. A bandage was then applied, from the toes upwards, passing under the free ends of the adhesive plaster and around the straps in the front of the thigh, to prevent slipping. In all of his cases he secured firm bony union. He claims for this method the following points of superiority over other methods which have been practised. It is neither so painful nor so expensive as Malgaigne's hooks. The fragments are not tilted, as in Professor Wood's method, by a figure-of-eight bandage passing through hooks on the under-surface of the splint.—*Phil. Med. Times*, from *The Canada Lancet*, January 1, 1876.

PATHOLOGY AND TREATMENT OF ANGINA PECTORIS.

ANGINA PECTORIS is generally considered to be a neurosis of the cardiac plexus. This, however, Professor Sée denies, because the sympathetic is not a sensory nerve. He considers it an affection of the pneumogastric alone, the only sensory nerve that enters into the formation of the cardiac plexus, and maintains that it is due primarily to anæmia of the heart. The mechanism of its production he explains as follows:—When, in consequence of some organic lesion, the myocardium receives less blood than normal, the terminal branches of the pneumogastric contained in it receive less also, and it is a well-known fact that pain and numbness are the immediate consequences of anæmia of a nerve—hence the anxiety and the substernal pain. This pain produces a reflex irritation of the motor branches of the spinal-accessory nerve, which is the real moderator of the heart's action, hence the heart's action is at first less frequent, becoming accelerated and irregular only when the excitation of the moderator nerve gives place to exhaustion and paralysis.

This excitation may even be sufficient to cause a stoppage of the heart's action. The radiation of the pain into the left arm, &c., is explained by the transmission of the initial excitation of the intracardiac filaments of the pneumogastric to other neighbouring nerves. The excitation is transmitted to the nerve centres, and thence reflected at once by eccentric or secondary irradiation to other sensory nerves. With these radiated pains, veritable reflex motor disturbances may be associated; for instance, trismus or constriction of the œsophagus. Professor Sée also claims that this explanation applies equally well to the so-called cases of primary angina pectoris, which is generally supposed to be a simple neurosis, totally independent of any cardiac lesion, though it may end fatally. These cases are principally met with in topers, smokers, the gouty, the hysterical, and in hypochondriacs. One of the first symptoms of alcoholism is endarteritis, and no one claims that the coronary arteries are exempt from this lesion. Smokers are said to be very subject to angina pectoris, but this is the case only with those who use tobacco excessively, and in whom it has already lessened the appetite and weakened the digestive powers. An intermittent and irregular pulse is the first symptom of this excessive use of tobacco, and this is followed by a tetaniform contraction of the vessels. Is it irrational to suppose a similar contraction of the coronary arteries, and consequent ischæmia of the heart? Cardiac lesions, especially of the myocardium and coronary arteries, are the rule, not the exception in old gouty patients, hence angina pectoris cannot be primary in them. Finally, vaso-motor disturbances are well known to be of frequent occurrence in cases of hysteria and hypochondriasis, and spasm of the coronary arteries will produce ischæmia of the heart just as well as atheroma. Angina pectoris is therefore held to depend on a similar anæmia. The indications for treatment are promptly to relieve the pain, to regulate the circulation, and to facilitate the respiration. Hypodermic injections of morphia are the most reliable means of treatment. Chloral hydrate is second only to morphia. It produces sleep more promptly, relieves pain better, and facilitates respiration, but it has hardly any effect on the circulation. It seems to be absorbed more rapidly when given by the rectum than by the mouth. Chloroform is too dangerous to be used. Nitrite of amyl, a drug little used as yet in France, produces dilatation of the vessels, but has no sedative effect, and hence fulfils the indications only in part. Hypodermic injections of atropine are dangerous, especially in children. The antispasmodics proper are useless. Electrification of the sympathetic is out of the question, and of the pneumogastric, though vaunted by some, is dangerous. In the intervals of the attacks, we must rely on digitalis, bromide of potassium, and good hygiene.—*N. Y. Med. Record*, from *La France Médicale*, April 5 and 8.



Forster & Co., Lith. Dublin.

DR. SMYLY. PORTION OF TOBACCO PIPE IN THE ANTERIOR CHAMBER
OF THE EYE, REMOVED BY INCISION THROUGH THE CORNEA.
RECOVERY.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. VII.—*Notes.* By PHILIP C. SMYLY, M.D., F.R.C.S.I.;
Surgeon-in-Ordinary to His Grace the Duke of Abercorn;
Member of Council of Royal College of Surgeons; and Surgeon
to the Meath Hospital.

THE following cases I bring before the notice of the profession, in the first place, to illustrate the advantage to the surgeon as well as to the physician of familiarity with the use of artificial light, applied by means of the reflector, whether it be used for the larynx, nasal cavities, ears or eyes; and secondly, as each case is in itself interesting as presenting certain difficulties in the treatment.

The first case is that of William D., of Gorey, sent to me by Dr. Allen. He was a very tall man, with not many teeth. Eighteen days before he had been eating some brown bread; he felt something hard with his tongue, but not being able to find it again he swallowed the morsel. He at once felt a prod, and felt pain every time he tried to swallow. This went on for thirteen days, when, in trying to swallow some food, he felt very severe pain, and could no longer swallow any solid, even a little fluid with great difficulty. For five days he continued in this miserable condition. His voice was hoarse, and he seemed very much exhausted.

On making an examination of the pharynx, &c., with the laryngoscope, a black line was distinctly visible behind the arytenoid,

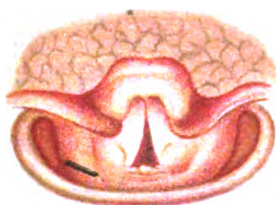
and across the fossa formed by it and the opening of the œsophagus. With a forceps curved at a right angle, an attempt was made to catch whatever this object was. The forceps slipped off with a click. The diagnosis made was, that the foreign body was a needle embedded, the part in view being the middle, while the ends were embedded in the flesh. It was sufficiently easy to catch this portion, but impossible to move it. I thereupon took a flexible metallic bougie, No. 2 of Weiss, and with a wire nippers made a very short hook at the end. This I passed down, bending the bougie to the curve of the pharynx, and with some difficulty hooked it under the needle, then, again passing down the forceps, I caught the needle next the arytenoid, and gently drawing the hook and pressing down the forceps towards the middle line, the point of the needle was freed, and the needle came up in the firm grasp of the forceps. The condition of the parts is very well delineated in the drawing, and the needle after its removal. The needle measures one inch nine sixteenths. The middle portion exposed measures six sixteenths, the ends being in the tissues, the point to the depth of half-an-inch. Both ends are black from being so long in the blood; the middle portion still retains its polish.

All the distressing symptoms were removed, and the patient was able to eat freely and drink without difficulty. He returned home the same day.

Some time after Dr. Allen very kindly sent me the following note of the case:—

“Mr. D., aged sixty, a very healthy farmer, consulted me on the 9th of June, stating that 18 days previously, whilst eating some bread, he was sensible of some foreign body” (and so on, the facts stated above). “I failed to find any foreign substance with the finger pushed as low down the pharynx as I could, but he stated that I struck the object with an oiled catheter passed down as a probe. Seeing the urgency of the case, I ordered him to put himself at once under your care, which he did. I have seen him this evening, and he assures me that he is quite well. He could not swallow solids for some days after you removed the needle, but there is no difficulty now.—Very sincerely yours, J. B. ALLEN.”

The next case is interesting, showing how much the eye can tolerate without being destroyed. The boy was sent to me to the



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DR. SMYLY. NEEDLE, 18 DAYS IN THE ŒSOPHAGUS, REMOVED WITH
FORCEPS AND BLUNT HOOK, AIDED BY THE LARYNGOSCOPE.

Meath Hospital, and was seen by the late Dr. Hildige in consultation. The boy had been fighting with a friend, having a new clay pipe in his mouth. A blow broke the pipe and cut his eye. For several days the eye was bathed with the best results, but when the eye was opened a white substance was clearly visible in the anterior chamber. Having carefully examined the eye, I made an incision as for the linear extraction, and with a Shuft's spoon removed the small portion of the stem of the clay pipe. The amount of iritis being very slight, Dr. Hildige considered an iridectomy unnecessary. The case progressed satisfactorily, the free use of atropin and water dressings preventing any undue inflammation.

The drawing, done from the patient by Mr. Burnside, represents the exact condition on his admission.

The two following cases were treated, one for five years, the other for as many months, for ozæna. The first case, Miss C. B., was carefully examined with a rhinoscope, both posteriorly and anteriorly; there were all the characteristics of ozæna—the mucous membrane tumid, and the spaces between the spongy bones filled with foetid muco-pus; the one side was quite stopped, the other was quite healthy. Every kind of syringing had been tried without effect. Posteriorly the affected side presented a very curious appearance. A round hard-looking mass filled up the whole side. On passing a very curved forceps (made for removing the posterior plug in cases of epistaxis), this was actually felt to be a hard substance. This was so firmly fixed that I could not move it from behind, but by passing a broad flat hook and a pair of polypus forceps, I succeeded in removing the foreign body, which turned out to be a small pebble, completely crusted over with chalky deposit. The child's mother then remembered that five years before she had pushed a pebble into her nose and it had never been thought of. The nose was well in a week. The other case was a child about ten years old, who was also treated with injections, &c. The cause was a small portion of sponge she had pushed up. The ozæna was at once cured by its removal.

The next case was treated for a very long time for obstinate otorrhœa. Mrs. S., the child's mother, gave me the following notes of the case:—

“January, 1863.—E. S., aged five, put a large glass bead into

her ear. Dr. ———, the nearest medical man, was immediately called in; he applied a large instrument to the ear for some hours, and then used a garden syringe. He stated that the bead was visible, but failed in getting it out. Dr. T. saw the child next day, and operated, but without success, using chloroform. After a few days' interval, he again operated, and affirmed that he both saw and felt the bead, and advised that the child should be taken to Dublin. The medical men consulted said there was no bead. The child was then taken home, and had no further advice for five years, during which time the ear discharged. In November, 1867, Dr. Smyly saw the ear, and treated her until January 1, 1868, on which day he removed the bead."

When I first saw Miss S., there was a very great flow of purulent matter from the ear. When this was removed, a large number of very florid granulations, or vascular polypi, became visible. These I treated according to Yearsley's plan, packing the ear with wet cotton wool. This was continued from November until January, when, on examining the ear, I saw something, and on feeling it, I found it hard. I may say at this time I had heard nothing of the bead. Carefully I felt it, and tried to remove it. At last, with considerable difficulty, I removed a large glass bead—one of those angular beads made by cutting a tube in pieces, used for making bead mats for the table. It had evidently escaped detection before from the position which it had taken up—namely, the tube exactly fitted the external meatus, and the aurist who examined the child soon after saw the membrane of the drum through the bead, and was so led to declare that there was no bead in the ear.

The child is still subject to slight returns of otorrhœa, and the ear is quite deaf. Had artificial light been employed in the first instance, with a condenser such as the laryngoscopic mirror, or the hand mirror of Politzer, the bead could not have escaped detection.

A girl came to the Meath Hospital with an abscess about the middle of the forearm. It was opened by a simple incision, followed by a copious discharge of pus. The knife struck on something hard. On asking the history of the case, she told me that eighteen months before she and another girl had an "argument." The friendly disputant enforced her reason with an umbrella to such good purpose that she broke her friend's arm and her own

umbrella. The girl with the broken arm was admitted into hospital, her arm was set, and she made a complete recovery. She never experienced any inconvenience until a fortnight before her visit to the hospital, on account of the large abscess above-mentioned. This was consequent on what she described as a "heavy washing"—namely, washing large quilts. This process involves much exertion and twisting of the forearm. On searching with a forceps, the hard substance was removed. It was an inch and a half of the iron rib of the umbrella, with the hole in the end for securing the cover. This large piece of iron had remained for a year and a half and some days in the forearm without giving the slightest inconvenience, and had not the girl made the unusual exertion, might have remained there for the rest of her life.

ART. VIII.—*Notes on Facial Neuralgia.* By ARTHUR WYNNE FOOT, M.D.; Senior Physician to the Meath Hospital; Fellow and Censor, King and Queen's College of Physicians, &c.

THE following cases of facial neuralgia illustrate well-marked varieties of the disease, some of them of a more than usually chronic and intractable character:—

Wednesday, 13th Oct., 1875.—A female servant, aged between forty-five and fifty, was recommended to my notice, at the Meath Hospital, for severe and long-continued neuralgia of the right supra-orbital nerve. She wished to attend as an out-patient, and hardly entertained any hopes of recovery, as she had been twenty-six years subject to it. It could not be traced to malarial infection, though it had several features which suggested such an origin. She had never been out of Ireland, nor had she lived in any aguish district. The pain occurs at the same hour and on the same day once a week, either a Thursday or a Friday, according to the day it was on in the previous week, and she always awakens with it early in morning. Every *alternate* attack is more severe than the previous one. The right temporal artery "ticks when the pain is on." She imitates the pulsations of the artery for me by rhythmically striking the palm of one hand with the fingers of the other. At the same time the right eye waters abundantly. Pressure and cold give temporary ease, and she is fond of keeping her forehead pressed against a window-pane to get relief. There is a well-marked painful point at the right foramen supraorbitale.

The attacks, within the last few years, are becoming more frequent and more severe, and are making her head "stupid." An intense itching in the right upper eyelid has come to precede the neuralgia so constantly as to give her a certain indication of its approach. The pain has begun to cross to points over the left eyebrow. There are reflex contractions in some of the orbital muscles supplied by the facial nerve, and these spasmodic irritations sometimes extend to the muscles of the right half of the body generally. As she expresses it, her "right eyelids twitch," and she "gets shakings of the right half of the body with the pain." At its commencement the pain used to recur every third or fourth week, but she has never been a longer period without an attack than four weeks. She had dyspeptic symptoms which seemed attributable to ordinary chronic gastric catarrh; she was "bilious," and had uneasy and painful sensations in the region of the liver, probably due to some catarrhal obstruction of the duct. She was ordered pil. hydrar., gr. xviii.; pil. coloc. et hyos., gr. xviii.; sulph. quin., gr. xij., in pil. xij., one every night; to be stopped if her mouth got sore. She was also ordered to keep constantly applied to the right supra-orbital foramen an ointment of veratria, twice the strength of that of the B. P. (*i.e.*, xvi. grs. to the oz.). Particular instructions were given her not to let any of this ointment get on the conjunctiva. She was prescribed for on the 13th, and was expecting her usual attack on the morning of the 15th October; the attack did not come till the 19th, when she had pain over the right eyebrow; in the evening premonitory itching, which occurred, on this occasion, in the *left* upper lid, was followed next day by severe pain in the *left* temple. On the 21st the pills were discontinued, as her teeth felt loose and the mucous membrane of the upper lip was superficially abraded; she had taken eight of them. Next day (22nd) she was ordered a mouth-wash of muriate of cinchonine, gr. xvij.; inf. ros., viii. ozs.; and ext. stram., ext. can. ind., aa. iv. gr.; mur. cinchon., xviii. grs., in xii. pills, one every night. Till the present occasion she had not, during the past year, once missed the regular day for the pain. On the night of the 27th the right upper lid itched, and next morning she had severe supra-orbital pain. She came to me on the 29th, and was given a mixture of sulphate of quinine in ten grain doses, with directions to take one ten-grain dose on the very first perception of the itching sensation, and to repeat the dose in two hours if the itching had not been removed by the previous one. For the

dyspeptic symptoms, which were returning, she was ordered sod. bicarb., ʒiij.; suc. tarax., ʒi.; spt. am. arom., ʒij.; aq. menth. pip. ad ʒviij.; a tablespoonful twice a day before meals. The veratria ointment is used constantly.

8th Nov.—She came, very much improved in appearance, to say she has not been so well for twelve months. The quinine greatly moderated the violence of the pain, making it quite tolerable. Two doses were taken, as directed, when her usually weekly attack was indicated by the itching of the eyelid. The pains, when they arrived, seemed broken up and dispersed; they were irradiated through branches of the cervical and brachial plexuses, or as she said, “shot about through” her arm, shoulder, back of her neck, and front of her chest. No deafness followed the full doses of quinine. Her dyspeptic symptoms were very much improved. Wishing to find out their relative values, I, without her knowledge, substituted ten-grain doses of muriate of cinchonine for those of the sulphate of quinine, and desired her to take the medicine on the next period as before.

12th Nov.—Reports herself as greatly improved. She found the muriate of cinchonine did not stop the itching as quickly or so thoroughly as the quinine, but had a very beneficial effect on the subsequent pain.

19th Nov.—She has no tendency to the pain, and the itching has become very slight.

31st March, 1876.—She has been very well since last seen; has not enjoyed such freedom from pain for twenty-six years; had almost forgotten what it was not to live in dread of pain, and had never hoped to be again so well. She always keeps quinine in readiness, and has taken as much as forty grains, in the directed doses, at short intervals, when bent on baffling the pain, and that without any disagreeable results. She thinks the freedom from pain cheaply purchased at the cost of the quinine with which she provides herself. She considers herself quite cured.

A coach-fitter, aged forty-seven, was brought under my notice, as an out-patient at the Meath Hospital, 19th July, 1876. For the last fourteen months he had been suffering from severe neuralgia in the right side of the face. Pain was almost constantly present to some degree, but he was subject to violent exacerbations every morning. He was a delicate, pallid-looking man, but had never been abroad, and lives in Dublin. The diseas

attributed to working in draughts. He has been quite unable to follow his business for a long time. As he sat on a chair before me, there was a very apparent twitching of the right side of the upper lip and cheek. He described the pain as frequently felt just like an auger boring a hole into his face above the zygoma (the *malar painful point*). He has been rather deaf for some time in the right ear; there is constantly a creeping sensation over the right side of his face, and a numbness over the same territory. During a paroxysm of pain he cannot bear to touch the whisker or hair on the right side of his head, nor can he endure the contact of cold water, nor chew anything, and his "mouth pours water." He has often spasmodic contraction of the right masseteric muscle, and irradiation of the pain along the right of the neck to the shoulder. The pain used to be unusually violent in the mornings, probably from increased debility due to loss of rest at night, as he has to get up and walk about at night, since he finds this to be the only way of mitigating the pain. He had used many remedies ineffectually. He had had the only decayed tooth in the right upper jaw extracted, and also a sound one, only with the effect of aggravating his sufferings. He was not of intemperate habits, but had found marked relief from a glass of whiskey, so much so that he christened this remedy "the soother." The principal painful points are at the right foramen infraorbitale, where he has a sensation of a "burning and boiling heat;" just above the zygoma, in front of the ear, where the auriculo-temporal nerve traverses the zygoma, where the pain is of a boring character; and at the foramen mentale, where alone the pain is of a ticking or pulsatile kind. The pain in front of the ear is the most severe of all. When these attacks first commenced he had a numbness over the right side of the face. He was ordered pil. hydrar., gr. v.; ext. colch., gr. ss.; pil. col. et hyos., gr. v., in pil. ij.; to be taken every second night; an ointment of veratria, 20 grs. to the oz., to be repeatedly rubbed to the seats of pain; and sulph. quin., 40 grs.; tr. nuc. vom. 3ij.; syr. fer. phosp., 3ss.; aq. ad 3iv.; a tablespoonful twice a day. To take three pints of porter in the day and the best food he could get.

Saw him next, 24th July; he has had no bad attack of the pain since prescribed for. There has been no paroxysm, although he has some pain every morning, lasting until he goes out into the air. He considered himself much better; to continue the medicines.

31st July.—Has been able to resume his work. He is now

quite free from pain from noon to the following morning, and then it is quite moderate. He looks on himself as cured.

A labouring man, forty years of age, of good general health, was admitted to hospital 18th July, 1876, suffering severely from neuralgia of the three divisions of the fifth nerve of the left side. He was very pale and delicate looking from loss of sleep and inability to eat anything but the softest food, such as arrowroot, owing to the impossibility of mastication. He lived in a low damp situation "along the Boyne water." He had had "a touch of this complaint for the last thirteen years," but it never had been very severe till the day before last Christmas, when he was exposed early in the morning to severe weather while out looking after some lambs. On the day in question he was suddenly seized with severe neuralgia in the nervus alveolaris inferior, the pain affecting the lower teeth, lips, and chin on the left side, with a well-marked painful point at the foramen mentale. The pain has since then extended to the infra and supra-orbital nerves. The pain comes and goes suddenly, leaving behind it such a "soreness" that he is quite unable to touch his beard or whiskers on that side with a comb, or to wash his face. There is a greatly-increased flow of saliva from the left side of the mouth, a unilateral fur on the tongue, puffing of the infra-orbital tissues, lachrymation and hyperæmia of the left conjunctiva. The pain is severe in the external auditory meatus, affecting the branches of the fifth, named the nervi auriculares anteriores. The teeth, especially those on the left side, were all thickly encrusted with tartar, and the edges of the gums were red and swollen, as if he had had mercury, but the breath and saliva were free from fœtor. He had not an unsound tooth in his head. He had had two (sound ones) extracted since Christmas without benefit. The hyperæsthesia of the teeth is intense, the gentlest contact of a silver spatula causing extreme pain. He is unable to masticate the softest food. He had been six weeks under treatment before admission, and said that he had been taking "quinine pills and quinine water" all that time. As he described the sensation in his teeth as exactly that of their being "on edge" from eating sour fruit, it was thought it might be connected with the effects of the acid taken during the long course of quinine solution. The saliva was tested and found distinctly *acid*.

On the 18th July, the day of admission, he was ordered pil.

hydrar. v. gr., ext. colch. acet. $\frac{1}{4}$ gr., pil. col. et hyos. v. gr., in pil. ij. statim sumend.; and three draughts, each containing sulph. quin. gr. x., tinct. stramon. xv. m., to be taken with an interval of three hours between them.

19th.—Feels the soreness and pain in his face much less; was able to rub his whiskers and wash his face this morning. The pills had produced six motions. He was deaf in “five minutes” after the *first* dose of quinine. The deafness was passing off to-day. The salivation had been quite checked since yesterday, either from the action of the quinine or owing to the intestinal flux. He felt uneasy on this account, because he thought the salivation was a salutary means of “carrying away water from the brain.” Neither the pills nor the quinine draughts were repeated, but he was ordered a mouth-wash—Sod. bibor., sod. bicarb., āā. ʒij., liq. calcis ad. ʒviij—a tablespoonful to be used frequently. This greatly removed the “edginess” of the teeth, and gave him immediate and marked relief from the disagreeable feeling in them. He was also ordered a tonic mixture consisting of liq. arsen. hydrochl. 40 m., sulph. quin. 40 grs., ac. sulph. dil. ʒi. aquæ ad. ʒviij., two tablepoonsful three times a day.

21st.—Has had no pain “worth speaking of” since under treatment—the last very severe paroxysm was on the 14th. He has before now been as long as seven days without a very severe attack, but never longer. He was able to chew a little bread and milk this morning.

22nd.—Was ordered to rub his gums with tincture of myrrh.

24th.—Was able this morning for the first time to press a bit of bread between the molars on the *right* side; the *soreness*, which had been constant, is leaving the skin of the face.

25th.—Able for first time to knock his teeth together gently, and to chew a crust this morning. Has now been eleven days without a paroxysm. He says the “biggest rests” he had ever had before were four, five, and seven days. He was very much pleased at the prospect of being cured. The following day he said he felt quite well enough to go home and return to work. The sensibility of the teeth had subsided, the tartar had been removed, and the gums restored to their natural condition. He was ordered to continue the mixture of arsenic and quinine for some time.

A pale, nervous, debilitated-looking woman, fifty-one years of age, was admitted 8th August, 1872. She came from a low-lying

and damp district in the Co. Fermanagh. She had been ten years affected with neuralgia of the fifth nerve on the right side. She had first felt it as a sudden pain while eating, and induced by mastication; at first the pain was slight in comparison to its subsequent severity, and returned at pretty long intervals. When admitted it was almost constant. She had, as usual, had several teeth extracted without benefit. From habitual restraint of the action which principally induced the pain, the right temporo-maxillary articulation was quite stiff. There was a numb cold feel all over the skin of the right cheek; the æsthesiometer showed comparative deficiency of common sensibility, illustrating the rule laid down by Nothnagel, that hyperæsthesia, for the most part, occurs in recent, anæsthesia chiefly in chronic cases of neuralgia of the face. The right half of the tongue (*nervus lingualis*) was particularly affected in this case, and the pain in this region was that which she most complained of, and was the last to be relieved. There were painful points at the mental and infra-orbital foramina, and at the inner angle of the eye corresponding to the supra-trochlear nerve. The right side of the face perspired, while the left remained dry. The labial arteries on the right side throbbed violently. I frequently counted her pulse by them; she compared them to red hot wires jerking in her lips. Compression of these vessels gave no relief; the pain was increased if she "held the threads," as she called them. There were spasmodic twitchings of the muscles of the cheek and right side of the mouth. The pain in a paroxysm is irradiated from the face over the side of the head, and over the side and back of the neck to the right shoulder and arm. The paroxysm is induced, especially by any attempt at mastication, by turning her head to the right, by speaking (probably from the irritability of the *nervus lingualis*), also by the contact with the tongue of either hot or cold fluids. The liquids she subsisted on had all to be taken at a tepid temperature. Salt in her food aggravated the pain, concentrating it in the tongue; she could not use it, and her beef-tea in hospital had to be made without it. Stimulants always aggravated the pain. Her face wore a settled expression of despairing misery. She hated to be questioned on the subject of her complaint, because she had so often told the same story of unmitigated pain, and because the very act of speaking of it was sure to bring it back if temporarily absent. Consequently she sat silent, dejected, and motionless. She could not touch either the outer or inner surface of the cheek,

especially the latter, without inducing the pain. Frequently she experienced an actual aura in the form of a rush of heat from the stomach to the head, which was followed by throbbing of the facial arteries, and ushered in a severe paroxysm. It was with great difficulty she had been persuaded to come to Dublin, as she had long given up any hope of relief. She had before this been in a Dublin hospital, and only wished to die. She said she had not slept more than an hour at a time for the last year.

The following plan of treatment was adopted:—On the day of admission, 8th August, she was ordered a 30-grain dose of chloral for night; an ointment of veratria xv. grs., chloroform 3ij., lard 1 oz.—the ointment to be kept in a wide-mouthed stoppered bottle and applied to the painful points; the right side of the face to be covered then with French wadding, and a flannel swathe put on to keep the wadding in position. *R. Fer. arsen. gr. i., fer. redacti, gr. xvj., sulph. quin. gr. xvj., ext. gent. q. s., divide into xvi. pills,* one to be taken three times a day. Before the ointment was applied, a galvanic current from twenty cells of Smee's battery was sent through the cheek for five minutes—one moistened sponge conductor being held on the infra-orbital foramen, and a pointed metal conductor pressed against the inside of the cheek. For her diet she was ordered thin arrowroot, beaten-up eggs, milk, beef-tea, and porter.

The chloral procured her some sleep, and was repeated every night with good effect, till the 14th and 15th, when she was able to do without it; she had to resume it subsequently. The ointment she at first thought increased the pain. It, certainly, did no decided good, and it was replaced by a liniment of morphia, chloroform, and soap, which was subsequently changed for a plaster made of extract of aconite rubbed into a paste with glycerine. The arseniate of iron was gradually increased from the sixteenth of a grain three times a day, to a twelfth, tenth, eighth, sixth, fourth, and third, given with increasing doses of quinine and reduced iron. At the third of a grain three times a day (4th September), symptoms of gastric irritation contra-indicated its further employment. The galvanic current was increased from that of twenty cells to forty and fifty of Smee's battery. It was for some time applied daily, and always carefully and properly, and in various ways; it seemed to moderate and postpone paroxysms, but not to have any permanent good effect. Muriate of ammonia, in half drachm doses, was taken several times without benefit. Ten-drop doses of

tincture of Indian hemp had no effect. Subcutaneous injection of morphia, even $\frac{1}{4}$ of a grain, disagreed with her, whether employed locally at the angle of the jaw, or at indifferent parts of the body; it did the pain no good, always made the cheek "stiff and hard," affected her head, making her feel "giddy and queer." Dr. Hudson saw her, 5th September, and suggested the use of stramonium and iodide of potassium, and the hypodermic injection of atropia. She was ordered tinct. stram. x. m. and iod. potas. x. gr. twice a day, and atropia was injected in doses increasing from $\frac{1}{100}$ th, $\frac{1}{50}$ th, $\frac{1}{25}$ th, to $\frac{1}{10}$ th of a grain, into the shoulder, back of the neck, and other parts of the body. The $\frac{1}{10}$ th of a grain caused dryness of the throat, dimness of vision, and dilatation of the pupils, and was not exceeded.

The upshot of all this treatment was an improvement in her general health, in the return of sleep, and marked mitigation of the infraorbital pain. She got more flesh, and her expression lost something of its worn and wearied character—she got stronger, and was able to take more exercise. The pain left her cheek and the side of her nose; she became able to stoop without exciting it, and to use the jaw in mastication. The pain became almost confined to the right side of the tongue and of the lower jaw. The neuralgia of the nervus lingualis—the least-often involved of all the branches of the third division of the fifth nerve—was most marked; it was from it she now suffered entirely; when the right side of the tip of the tongue was touched, the pain shot back to the angle of the jaw, and she could not bear any contact between the cheek and the right side of the tongue. On the night of the 3rd September there was a heavy thunderstorm, and, during its continuance, the lingual neuralgia was much more severe than it had been at any time in the previous week. She returned home, 24th September, in the condition above stated.

A young lady was brought to me, 1st March, 1876, on account of severe facial neuralgia, of almost daily occurrence, causing complete loss of rest at night. She had a most florid complexion, but her general condition indicated debility. She was of a family in whom a *neuropathic predisposition* existed. Her father suffered from a chronic neurosis of the psychical regions of the nervous system. She had become subject to facial neuralgia nine months before she came under my notice, from exposure to malaria in a damp part of England, while depressed in mind by the death of a

favourite sister from brain disease. About the time at which the facial neuralgia commenced, she suffered from such violent dysmenorrhœa that she used to scream if any one walked across the room or *spoke* while she was unwell. At its commencement the paroxysm of facial neuralgia recurred regularly at 1 a.m. every day. At first it affected the left side, but now had shifted to the right side of the face. The pain was most severely felt about the articulation of the jaw, behind the ear, over the temple, on the side of the head, and at a point below the superior curved line of the occipital bone. It was generally relieved by wine and Parrish's chemical food, and was induced or aggravated by fatigue. She was latterly becoming quite unable to walk from want of power in her legs. When I first saw her she had been awake continuously for several nights, and was so emotional that she did nothing but sob and cry, and I could make very little out about her by direct examination. The family history, the bilateral nature of the neuralgia, and the want of power in the legs, inclined me not to make a very favourable prognosis. The semi-paralysis of the lower limbs might be merely the result of the irritability of the fifth nerve, but the reflex-motor phenomena in such cases are almost exclusively those of irritation, and the best authorities hold that there is no ground for the belief that reflex paralyse occur in the so-called external neuralgias. However, the case turned out better than I had expected.

She was ordered liq. arsen. hydrochlor. ʒij., liq. strychniæ 80 m., syr. fer. phosph. ʒij., aq. cinnam. ad ʒvii.; a tablespoonful three times a day. Also, tinct. stram. ʒij., gut. nigræ ʒij., syr. prun. virg. ʒj., aq. camph. ad ʒiv.; a tablespoonful at night, and to be repeated at short intervals till the pain was subdued. She was directed to eat meat twice a day, and to take as much extract of malt, porter, or wine as she could. She had taken quinine in doses of six and seven grains without much advantage. She was also advised to have a decayed molar tooth in each side of the lower jaw extracted as soon as possible. Although I was unwilling to add to the number of teeth which have been victimised as scapegoats in the treatment of true neuralgia, yet I thought it right not to overlook them in this case, as, possibly, sources of continuous irritation of the fifth nerve.

16th March.—The decayed tooth on the right side had been extracted on the 9th, and she had some ease from the pain, and some sleep for the two following nights, but it then returned as

badly as before. The stramonium and gutta nigra sickened her, and she would not take them. She was prevailed on to take instead 3ij. doses of syrup of chloral, from which she got a little sleep. She continues in the same emotional state, crying from pain, weariness, and weakness. As I heard she had had, not long ago, an attack of jaundice, and there were indications of gastric catarrh, I ordered the following pill every night:—Pil. Hydrar. gr. iij., sulph. morph. gr $\frac{1}{4}$, sulph. quin. gr. ij., mitte viij., and 15 grs. of saccharated carbonate of iron after breakfast and dinner.

24th March.—She has been much better since taking the last medicines; she had taken all the pills, and this morning, for the first time, had perceived a disagreeable taste on her mouth. Her spirits had greatly improved, the emotional condition had quite disappeared, she could not yet walk well, and felt better when she kept at rest. The mercurial pills were stopped, and the following substituted:—Sulph. morph. gr. j., sulph. quin., fer. redact., āā. gr. xvi., in pill. viij.—one every night.

April 22nd.—I heard that the neuralgia was quite gone, and that she was able to walk as well as usual.

A hale old gentleman, aged seventy-six, lately married to his third wife, came to me, July, 1873, in reference to infraorbital neuralgia of the right cheek, of eight years' duration. He had tried many remedies without relief. Amongst others, quinine, arsenic, aconitia ointment, and electricity. He had no stumps or decayed teeth, but a complete set of artificial ones. The pain comes on early in the morning, about four or five o'clock, in stabs, "with a tick or pulse in it;" he finds some relief from pulling with all the force of his right arm at a rope which he keeps attached to part of his bed for the purpose; if this fails, he has to get up and walk about the room, as he cannot stay quiet while in pain. The neuralgia lasts on into the forenoon, and is attended with a very unusual secretory disturbance in the intestinal canal, requiring him to use the water-closet so often that he never can leave his house till the afternoon. The bowels are then certain not to act until the following day. He is very anxious to get cured. Fatigue aggravates the paroxysms; he had an unusually severe one the night after his journey to Dublin. The neuralgia and its accompaniments had a most depressing effect upon his mind. He was directed to smoke one or two arsenical cigarettes at bedtime, puffing back the smoke through his nostrils; to rub veratria ointment

(verat. gr. xx., chlorof. ʒij., ung. simpl. ʒj., keep in wide-mouthed stoppered bottle) diligently over the foramen infraorbitale at the first indication of pain, and to take the following tonic mixture: Liq. strych. ʒss., syr. fer. iod. ʒj., syr. lacto-phosp. calc. (Dusart's) ad. ʒviiij., a tablespoonful twice a day after meals. 2nd August.— He completely aborted an attack which began at 5 a.m. to-day by rubbing in the veratria ointment for fifteen minutes. The only indications of nervous disturbance in the face which remained were hyperæsthesia of the cheek to touch, and a glazed puffiness beneath the eye. As he had heard of anti-neuralgic pills, and was anxious to have something of the kind, he was ordered ext. can. ind., ext. stram. āā. gr. xij., sulph. quin., ext. opii, āā. gr. xxiv., in pil. xxiv.— one to be taken when the pain threatened, and to be followed by a second, and, if necessary, by a third, at intervals of half an hour. He never had to take more than two of these in the same attack. He was directed to use the most generous diet, and to drink Burgundy. Under this treatment he got rid of the neuralgia, and returned home well pleased with the result.

The injection of morphia in true facial neuralgia often seems to give but temporary relief, is often not available when most wished for, and frequently disagrees, owing to the depressed condition of the patient, but in the following case one injection gave immediate and permanent relief:—A servant-woman, aged thirty-three, came under my care in the Meath Hospital, May, 1871. She had been suffering almost constantly for the last eighteen months from neuralgia of the right side of the face, affecting principally the first division of the fifth. The pain, which was paroxysmal, “comes out over the eye,” affects the temple, which “is getting numb-like,” and makes the right eye water abundantly. The unaffected side of the head and face perspire; the right side does not. At times, distracted with pain, she held that side of her face to the kitchen fire, and she found she could bear the heat of the fire much longer on that side of the face than on the other; at other times she tried the effects of cold by keeping that side of her face uncovered by the bed-clothes at night. Neither gave her marked relief. She was given Fowler's solution, and afterwards saccharated carbonate of iron, in full doses, without any benefit; but in half an hour after the first injection of morphia (one-sixth of grain) into the temple she said she was “in heaven.” I offered to repeat it, but she said she did not want it, and soon after left hospital quite well.

A soldier's wife, aged thirty-four, was admitted Wednesday, 26th May, 1875, for severe pulsatile pain in both temples, and along the sagittal suture. The next morning, when I saw her, she was lying on her side in bed, with either hand pressed flat against the sides of her head, compressing them as firmly as possible. She described the pain as of a linear kind, and indicated its course by drawing a line across the temple from the eyebrow to the orifice of the ear. The anterior division of the temporal artery throbs very perceptibly, and she finds pressure remove this panting. There were reflex contractions of the muscles connected with the temporo-maxillary articulations, which were very stiff when she tried to speak, drink, or cough. She had been suffering from this neuralgia for a month; it was increasing in severity; it had been very bad since Friday, 21st; it had not left her for half an hour since the evening of Sunday, 23rd; she was admitted on the 26th. Next day, as I was in the act of pointing out that supra-orbital neuralgia is the form which most frequently results from exposure to cold, and that the first branch of the fifth nerve is the almost exclusive seat of malarial neuralgia, she said that she attributed it to cold to which she was exposed as a charwoman, but that she had been in Africa and Japan with her husband's regiment. She had been four or five years at Capetown, and two and a half years at Yokohama. She did not know if she had ever had ague, but she had had a fever with hot and cold periods, and had taken quinine and iron for it. She was at once ordered ten grains of quinine in solution, to be followed by ten more in three hours, unless she had got relief from the pain. She got complete relief of the pain within an hour after the first dose, and the pain remained away for four hours. She then took the second dose, and the pain almost entirely disappeared.

28th.—She no longer holds her head clasped between her hands; the pain is "most decidedly better;" there was no deafness or other inconvenience from the twenty grains of quinine. The action of her heart was weak, rapid, and irritable. A *painful point* existed on the scalp, at the apex of the lambdoid suture. She was ordered:—*Olei phosphorati* m. 80, *ol. morrh.* ʒij., a teaspoonful at night, and *R. tinct. nuc. vom.* ʒij., *syr. fer. phosp.* ʒj., *aq. cin. ad.* ʒviij.; a tablespoonful twice a day. She left hospital quite well on 31st May.

About the time the last patient was under observation, a middle-

aged man applied to me at the hospital for neuralgia of the right side of the face, from which he had been suffering for five years. His business was much in woods, as he was occupied in surveying and buying trees. The neuralgia only occurred during the day, and he was more free from it when in towns. The pain crosses the upper lip, and makes the coronary arteries of the right side of the mouth beat like wires. The pain makes his eyes, nose, and mouth run water profusely. It was ascertained that the discharge from the nose was an overflow of tears connected with the excessive lachrymation, and was not from the nasal membrane proper. This latter—the Schneiderian flux—is a rare phenomenon in facial neuralgia; the discharge is then of a mucous character, sometimes mingled with blood, and is due, according to the researches of Vulpian, to irritation of one spheno-palatine ganglion, which causes increased secretion of the nasal mucous membrane of the same side. Augmented lachrymal secretion is by far the most frequent of the secretory disturbances in neuralgia of the fifth nerve, and is due to the fact that both the lachrymal and orbital nerves contain secretory nerves for the lachrymal gland, irritation of which causes a flow of tears. Increased salivary secretion, which is somewhat less frequently observed, is explained by the fact that the salivary secretion can be increased through reflex action by irritation of the fifth nerve. It is still undetermined whether the secretory filaments (*rami linguales*), which run from the third branch of the fifth to the submaxillary and sublingual glands, belong originally to this branch or to the *chorda tympani*.

A full stout man, of florid complexion and gross habit, aged about fifty, applied at the hospital 7th October, 1875, for neuralgia in the first and second divisions of the fifth nerve on the right side. There was a particularly painful *nasal point* on the bridge of the nose, where the ethmoidal nerve emerges from the nasal cartilage. He had been nine months affected. The pain, when it began, struck him daily at 11 a.m., and again in the afternoon; of late, it has not been so extremely regular in its periodicity as it was at first. Before the pain comes he has vertiginous sensations and dimness of sight. During the paroxysm he cannot attempt to cough or blow his nose, and the skin of the right side of his forehead feels as cold as ice; when the pain is going away he gets a singing in the *left* ear, and the right cheek becomes puffed. From the certainty with which stooping induced the pain, he has been obliged to give up

his favourite pursuit of gardening, and has always to get his wife to lace his boots. He had been in the army, lived in India, and had liver complaint. He has had three teeth extracted from the right upper jaw without any benefit. I advised him to take much less stimulants than he appeared to be in the habit of doing; to take Turkish baths frequently; to use veratria and chloroform ointment locally, and to take one of the following pills every second night, and a seidlitz powder early the next morning:—*Pil. hydrar.* 3j., *res. podophyl. gr.* iij. *ext. stram. gr.* iv., in *pil.* xij. He attributed the improvement which ensued to the Turkish bath.

In the following case the neuralgia appeared to be of traumatic origin. The subject of it was a woman, twenty-six years of age, who was admitted into my wards 19th August, 1871. Nine months previously she had received a kick from a cow she was milking, just in front of the left ear on the zygoma. Two months afterwards she began to suffer from violent pains of an intermitting and "panting" character, strictly limited to the left side of the head and face. She was not of a neuralgic temperament, for although she had several decayed teeth she had never suffered from toothache. The pain was distributed over the left side of the forehead, face, chin, and head. She had been unable to brush or comb her hair for nineteen weeks before admission from the pain caused by doing so. On the 10th of August the pain became intolerable, and continued so for a week, totally depriving her of sleep. At the end of that time it abated, and the left cheek began to swell. She was admitted on the following day. When admitted it was ascertained that there was no paralysis of the portio dura, but that many of the muscles of the left side of the face were in a state of reflex ankylosis from pain. The jaws were kept half an inch apart, and she could neither close them nor open them any further. She had much pain in the ear and behind it, but was not deaf. She complained of difficulty in swallowing liquids, and was unable to chew solids, so that she was much reduced from pain, sleeplessness, and inability to take sufficient nourishment. Immediately after admission a large hot linseed-meal poultice was applied to the side of her head and face, and she was given 20 min. of Battley. The treatment afterwards adopted was as follows:—The bowels were cleared out with a dose of calomel and scammony, and she was then ordered *ext. op. gr. ss. ter die*; veratria ointment (20 grs. to oz.) to the forehead, cheek, and chin; and two leeches at

a time to the seat of the original injury just in front of the ear. There was some difficulty in getting the leeches subsequently applied to take, owing to the veratria ointment, and they refused to bite, even though the skin was well washed. They were then applied with advantage to the gums. On the 26th she was given 3 min. of Fowler's solution three times a day. A mixture of mercurial ointment and extract of belladonna was finally rubbed into the cheek over the root of the zygoma. She required a liberal allowance of wine. Under this treatment the pain disappeared; she became able to sleep, eat, and brush her hair, and she left hospital, well satisfied, 19th September, 1871. On the 25th Aug., 1872, I heard that she had up to that time had no return of the neuralgia. The history, course, and progress of this case point to neuritis as the cause of the neuralgia.

The above cases of neuralgia of the face, selected hastily and quite at random from my notes, illustrate some of the varieties of the disease as it affects the whole of the fifth or one or more of its main branches. Although almost invariably limited to one side, it does not appear that either side is more liable to it than the other. Its greater frequency in women is well established. According to Valleix the proportion of women to men is 143:124; Hasse, 30:27; Schramm, 136:59; Erb, 51:21. Next to the sciatic no nerve is so often the seat of neuralgia as the fifth; the anatomical explanation for this is the great exposure to cold of the portions of the skin to which its branches are distributed, and the number of narrow canals and foramina its branches traverse. Compare, with Hyrtl, the great immunity of those branches which pass through the wide spheno-palatine foramen to the nose, with the frequent occurrence of the disease in the more confined filaments. The cases illustrate many of the concomitant sensory, motor, and secretory phenomena, which are more numerous and diverse in this than in any other form of neuralgia, from the intimate connexions that exist between the fifth and so many other nerves of the body. The utility of narcotics and tonic treatment is shown in several of the cases, as well as the advantages to be derived from attending to the state of the liver.

ART. IX.—*On the Use of the Magnet in the Diagnosis of the Presence of Steel or Iron in the Eye, and in the Extraction thereof; with Illustrative Cases.* By WILLIAM A. M'KEOWN, M.D.; Surgeon to the Ulster Eye, Ear, and Throat Hospital, Belfast.

Two years ago I published, in *The British Medical Journal*, the particulars of a case in which I extracted a piece of steel from the vitreous by the aid of a pointed magnet introduced into the vitreous through an incision in the sclerotic. So far as I am aware, that was the first case on record of the use of the magnet in such a way.

A single case with a fortunate result is not sufficient to establish the value of any operation. It may raise a question, lead to inquiry, and induce others to make a trial, but usually years elapse before sufficient data can be collected to secure for the new method a place in science. The favourable impression which I at first formed of the value of the magnet has not been effaced. When opportunity offered, I have used it, and now I shall state as concisely as possible my reasons for using it, and my experience of it.

Cases of lodgment of foreign bodies in the vitreous have always been a source of great anxiety to ophthalmic surgeons. It is often difficult to ascertain whether a foreign body is in the eye, and still more difficult to extract it when its presence is ascertained. As a rule, to which there are few exceptions, an eye in which a foreign body is lodged in the vitreous is doomed, and the patient is fortunate if his other eye escape an attack of sympathetic ophthalmia.

Such a class of cases offered, therefore, a fair field for trial of a new plan. If the known risks of the case warranted an attempt at extraction by forceps introduced into the vitreous, with a doubtful chance of success, it appeared plain that the introduction of a magnet was equally justifiable, and, besides, it seemed to me much more likely to be successful. I, therefore, determined to put it to the test. Previous to doing so I took care to ascertain, by experiments on the eyes of animals, what the magnet would and would not do. I found it would draw metal through broken-up vitreous from one side of the eye to the other, whilst it would not draw it through any part of the vitreous which retained its structure, or through the most delicately organised membrane of the eye.

At last a suitable case came before me at the hospital. The following are the details:—

Edward Mills, aged fifteen, apprentice in Harland and Wolff's iron shipbuilding yard, consulted me on the 21st November, 1873. He stated that on the previous day his right eye had been wounded by a piece of metal which flew from a hammer. There was a wound in the cornea, beginning in its centre, and passing out towards the periphery. The iris was cut at its pupillary margin. The boy could count fingers. The ophthalmoscope showed no trace of opacity of the lens, and the fundus of the eye, with the exception of a small part at the temporal side, could be seen. Deep in the vitreous body at that part were observed, by direct illumination, opacities situate near to the retina, and showing a marked tendency to a dependent position, as if something were pulling them down. Sometimes at the lower part of one of the opacities a silvery streak appeared, as if from the sharp margin of a bright metallic body. By oblique light also the opacities could be observed, and with it they appeared red, with a very lustrous aspect. It was clear that the metal was in the eye, but masked by blood.

Next day the lad reported that he had suffered intense pain in the eye and brow during the night. The media of the eye had become so cloudy that the disc was only seen obscurely, and the foreign body could no longer be detected. It was plain that the eye was threatened with a rapidly destructive inflammation, and that immediate interference was necessary. By keeping the patient lying on his face for some time, the body again came into view.

Dr. Andrews, of the Belfast Queen's College, kindly lent me a bar-magnet, about eight inches long, one inch broad, and about one line thick, and tapering at both extremities to a point, and with this I resolved to make my first trial of magnetism.

The patient having been etherised by Dr. Whitla, I made an incision about two and a half lines in length in the sclerotic, at the temporal side, about two and a half lines from and parallel to the corneal margin. I introduced a pair of iridectomy forceps into the vitreous, but I failed to touch the metal. I then passed the pointed magnet into the vitreous, and directed it backwards. The foreign body became attached to it directly, but was twice removed from it by the grasp of the margins of the sclerotic wound. On the third trial, however, it was extracted on the end of the magnet. It was

oval in shape, about a line long and half a line broad, and sharp on the edge, particularly on one side. The thickest part was about a quarter of a line. It weighed half a grain. The boy remained in hospital three days, and was subsequently treated as an extern patient. The treatment consisted in the instillation of a solution of atropine, and the application of a compress bandage. No pain was felt after the operation, the media of the eye cleared rapidly, and the vision improved from day to day. In a short time the wound in the cornea was scarcely perceptible; the iris, where it was cut and bruised, atrophied; the lens retained its transparency; the vitreous showed some slight filmy opacity where the foreign body had been lodged; the field of vision was perfect, save the small part to the nasal side, corresponding to the part of the retina in the neighbourhood of the wound. On the 13th December following he could read No. 2 of Snellen's types at one foot—a degree of acuity very satisfactory. He resumed his work soon afterwards. After the lapse of some months I saw him again, and found him quite well. The course which the foreign body took in this case was somewhat remarkable. It would seem, after cutting the cornea and pupillary margin of the iris, to have wheeled round the margin of the lens without wounding it.

In this case it will be observed that it was necessary to break up the vitreous from the incision in the sclerotic to the site of the foreign body. Nothing could be more satisfactory than the result, and my expectations of the value of the magnet were fully realised.

The lesson to be learned from Mills's case did not sufficiently force itself upon me at that time. It did not occur to me that in many cases the magnet might be used with advantage as an explorator in recent wounds when the presence of a metallic body was suspected; and as the next case shows this clearly, I will now briefly detail it:—

J. M'Auley, aged thirty, worker on the Northern Counties Railway, came to me on the 28th September last. He stated that a piece of metal flew from a hammer, and struck his right eye. I found a very jagged wound implicating the cornea and sclerotic at the inner part. It was a quarter of an inch or more long, with a branch cut of about one and a half lines. The lens was opaque, and the iris much torn, and sticking in the wound. From the history given and the appearance of the wound I could not say whether the metal was lodged in the eye or not. I snipped off the

prolapsed iris, and then, not having the magnet at hand, I put a pair of forceps into the vitreous, but could not feel the foreign body. Having obtained the magnet, I passed it into the vitreous, and at once detected the metal by the click produced on its coming into contact with the magnet. The magnet drew the metal to the wound, but could not bring it through. I enlarged the wound slightly, and then held the margins apart by a pair of straight iridectomy forceps kept open, and between the separated ends of the blades introduced the magnet. The metal at once bounded to the magnet, and whilst maintained just at the margin of the wound by the magnetic attraction, it was readily seized by the forceps, and extracted. It was a triangular piece, with rough blunt margins, and weighed three grains. The operation was completed by removing as much as possible of the lens by the scoop. From the violence and extent of the wound and the number of structures involved, little hope could be entertained of the preservation of any vision. There was considerable inflammation afterwards, but the wound healed pretty quickly, and without any suppuration. There was for some time considerable tenderness over the ciliary region. The slow inflammatory changes in the interior of the eye led to considerable atrophy of the globe. Indeed, from the first, taking into account the extent of the injury and its dangerous character, I urged enucleation, but the patient had an objection to this course not to be overcome. However, when this radical measure was not acceded to, it was well to have the main source of danger of sympathetic ophthalmia—the foreign body—removed, and to the magnet is wholly due the diagnosis and extraction.

A little reflection should convince the reader of the great use of the magnet in recent wounds involving the sclerotic and vitreous. There we have precisely the conditions to insure success—the wound open; the vitreous broken up to the full extent of the penetration; the way ready for the application of the magnet, and a channel for the exit of the metal, without the infliction of any wound. No time should be lost, however, as an impediment may quickly take place from inflammatory deposits. It may be that no conclusion can be formed from ophthalmoscopic examination because of the cloudiness of the lens, or of blood in the anterior chamber or vitreous. An ordinary probe introduced into the wound may be tolerably freely used, and yet may not come into contact with the body, and even if touched, such gentleness is necessary, or the body may be so small and shifting, that a hand, with the most delicate

touch, may not feel it, and besides, should it be felt in the vitreous, the extraction is a matter of the greatest difficulty. The forceps introduced may only push the body further out of reach, or touch it in such a way that to grasp it would be impossible. On the contrary, when the magnet is used, the metal, if in the vitreous, bounds to it, as it were, along the track made by its entry, and a clear metallic click may be heard and felt, as in M'Auley's case, and, if the magnet will not extract the body through the wound, it will at least maintain it in a position most favourable for its seizure by forceps. Besides, the magnet offers this immense advantage over any ordinary probe, that the metal tends to seek it, and if applied only at the wound, or if in the introduction it should not take exactly the course of the metal, the attraction is still exercised, and the metal will advance by its track of entry notwithstanding, and come into contact with the magnet at some point.

Whilst I advocate the use of the magnet in penetrating wounds of the eye, I would remark that it is to be done within certain limits, and with due caution. The cases of wounds and lodgment of foreign bodies in the eye present infinite variety, and routine treatment would only lead to disappointment and injury. Each case must be judged *per se*. The magnet is only capable of acting under certain conditions, and the probability of the existence of some hindrance should never be forgotten. For instance, the foreign body may be fixed in the membranes, either near the point of entry or at a point diametrically opposite, or may glide inside the sclerotic for a considerable distance. In the two latter cases it is very unlikely that the magnet would be of any service. If situate quite close to the wound in the sclerotic, the magnet might clear up the diagnosis. Indeed, I may note that the records of cases in which the eye has been enucleated show how frequently foreign bodies have been found just within the sclerotic, quite close to the wound, and have yet escaped detection. I would expect that in some such cases the point of the magnet applied just within the wound might detect the metal.

The cases in which the greatest caution would be necessary are those of glancing wounds, involving the sclerotic alone. Here any rough probing would lead to injury to the choroid, and perhaps separation from the sclerotic, and thus damage would be done in a case with every chance of doing well without treatment. Unless the choroid have been penetrated, as evidenced by escape of vitreous or other sign, the magnet or any other instrument

should not be allowed to pass beyond the inner lip of the sclerotic wound.

It will be remembered that, during the delay of twenty-four hours in Mills' case, the metal disappeared from view, and a prone position was resorted to, that the force of gravity might to some extent help to bring the body back to its original position. But would a powerful magnet held outside the eye not have proved more effectual, and at the same time have removed any chance of mistake regarding the presence or nature of the foreign body? And might not a magnet be used in this way to enable the surgeon to make a diagnosis of the nature of a body under observation by its movement, or want of movement, in response to movements of a magnet held outside the eye? These queries occurred to me afterwards, and so I was on the look-out for cases to put the matter to the proof. The two following are to the point:—

Robert Boyd, aged twenty-seven, of Whitepark, Co. Antrim, millwright, applied at the hospital on the 10th March, 1876. He stated that on the previous day his right eye had been wounded by a piece of cast steel from a chisel. I noticed a very small wound at the periphery of the cornea, and a small aperture in the iris at a point corresponding. There was some opacity of the lens at its superior and inner quadrant, but I could not determine whether there was any foreign body there. The fundus was muddy. Next day there was a little hypopyon, but the vitreous was more clear. The following day I detected a dark narrow body below and to the outer side of the optic disc, and quite close to the retina. Its margins were bright, but the centre dark. There was just a question whether the dark appearance, with bright margins, might not be owing to a chink in the sclerotic, caused by transit of the foreign body. The margins, however, were too lustrous to be caused by sclerotic reflection. Examination by the method of parallax also seemed to show that the appearance was caused by something on a level anterior to the retina. Before deciding upon operation, however, I wished to be sure of the nature of the body. For this purpose I resorted to the magnet. Accordingly, whilst I was inspecting the body by the ophthalmoscope, an assistant held a powerful magnet close to the eye, but not so as to interfere with my view, and moved it in different directions. A quivering movement of the body was caused, and thus not only was the question of its presence but its nature set definitely at rest.

The case was surrounded with the greatest difficulty. The metal was narrow and sharp, and would doubtless change its position and become embedded in the membranes; the lens would almost certainly become opaque and soon hide the fundus from view; the extraction of the metal was hazardous and, so far as I was aware, without precedent. The palpebral aperture was narrow, and the eye much sunken, and thus the difficulty of the operation was still further increased.

The case seemed hopeless if left alone; and believing that enucleation would probably be immediately called for, I determined to try to extract the metal, and if fortune did not favour, the radical measure could still be resorted to. Accordingly, having secured the assistance of Dr. John Moore, I performed the operation.

I made a section in the sclerotic at the temporal side of about three lines in length, as far back as possible from the margin of the cornea and parallel to it, the knife being thrust boldly back into the vitreous. The turning of the eye inwards to expose the section rendered the illumination of the fundus extremely difficult; and the necessity of using one hand to hold the extracting instrument, whilst the other held the ophthalmoscopic mirror, rendered it impossible to use the magnifying lens, and thus I could only have an idea of the position of the body from my previous examinations and by the luminosity diffused in the neighbourhood by the light reflected from the body. Magnetised forceps were introduced several times into the vitreous without success. At last, however, they drew the body forwards, so that Dr. Moore and myself could see it clearly attached to the forceps and led about by them. It chanced to have been attracted to the outside of the end of one of the blades, so that it could not be grasped. It looked large, being magnified by the anterior refracting media, and extremely brilliant. It was removed from the forceps several times by contact with the margins of the sclerotic wound. Finally, I succeeded in extracting it by the pointed magnet. It was a very narrow thin piece, about two lines long, with margins slightly irregular, just as I had seen it by the ophthalmoscope. It weighed one-third of a grain.

Next day the eye was much inflamed, the pus in the anterior chamber increased in quantity, and suppuration subsequently took place in the vitreous. Afterwards I enucleated the eye.

The foregoing case was most unpromising in every particular,

and I quite anticipated that the issue would be unfortunate. The eye before the operation showed a tendency to the suppurative process, and this circumstance made it more likely that a suppurative choroiditis should follow the frequent introduction of instruments.

The first trials of operations are usually not so favourable as those made after some experience has been gained. We come to know the defects of our instruments, and the special dangers, immediate and remote, attending the operation. This case shows that the extracting instrument should not only attract but grasp the metal, and thus prevent it from being removed from the magnet by contact with the sclerotic or any other structure.

The most striking lesson taught by the last case, however, is the use of the magnet held and moved outside the eye as a means of diagnosis. The quivering of the body under the influence of the magnet afforded proof beyond question of the presence of the metal and its nature, and warranted me in undertaking the operation. I have reason to believe that the magnet will in this way give aid in a class of cases most perplexing. We know how frequently, after a wound of the eye, we find floating and suspended opacities in the vitreous, and the question arises—is the foreign body hidden in one of them. The most experienced surgeon may find himself unable to form a sure judgment. The able work recently published by Mr. Brudenell Carter affords a case in point. After relating the particulars of a penetrating wound, he says:—"The ophthalmoscope showed masses of coagulum floating in the vitreous; and one of them, spherical and as large as a medium-sized pin's head, was hanging suspended by two fine filaments which appeared to be attached near the equator in the upper part of the globe, and which allowed the coagulum to reach nearly to the lower part of the lens. The floating coagula did not of course admit of any interference, but it was a question whether the suspended coagulum might not enclose the projectile, and whether an attempt should not be made to extract it. Upon full consideration, however, I determined to leave it alone. The coagulum was manifestly far larger than the projectile, and its spherical outline led me to doubt whether it enclosed anything, or was anything more than blood moulded into that shape by the cohesion of its particles." Similar doubts and difficulties have no doubt occurred to all ophthalmic surgeons, and it would be well if some of them could be removed. It may be safely laid down that if an opacity be capable of moving

at all, if it contain steel or iron it will be governed in its movements by the attraction of a magnet outside the eye; and even if masked by blood which is not floating, it is quite possible that the hidden body may be revealed to view. A trial of this simple plan cannot do harm in any case.

Shortly after the operation on Boyd, I was consulted regarding another case of metal in the eye, and in which by the magnet I was enabled to demonstrate its presence in the iris. The following is the history:—

James M'Dowell, of Annalong, in the Co. Down, applied to me at the hospital on the 14th March last. He stated that some days previously a small fragment of either stone or iron had struck his right eye. There was a very small mark on the cornea, scarcely perceptible; the pupil was regular, but contracted. In the iris, at its lower segment, and near the pupillary margin, there was an irregularity of surface, and there appeared to be a body of some kind in the iris. A magnet was applied close to the cornea, but without touching it, and on holding it for a few seconds the iris at the suspected spot advanced quite to the cornea, and on moving the magnet in different directions, the pupil changed its shape and position in response to the magnetic influence. The evidence was conclusive. I made a small section in the cornea, more peripheral than the site of the foreign body, and introduced the pointed magnet into the wound. Immediately the segment of iris containing the foreign body was drawn through the wound, and the operation was completed by snipping it off with scissors. The fragment of metal was very small. The patient left the hospital next day, the eye being in a most favourable condition. The wound was healed, and there was no pain or sign of inflammation.

As a rule, cases in which the metal is lodged in the anterior part of the eye do not require the use of the magnet. Should the foreign body be in the lens, the magnet will have no influence, and the surgeon must extract the lens and the metal at the same time by one of the ordinary operations for cataract. Should the body be observed in the iris, then an iridectomy embracing the part containing the foreign body should be performed. Should, however, the metal be hidden in or behind the iris, then, as in M'Dowell's case, the influence of a magnet shortly after the infliction of the wound might bring it from its hiding place, or impress such movements upon the iris as to show that the body was there.

The points established in this paper may be briefly summarised. The magnet may be used:—

1st. As an extractor.

2nd. As a probe.

3rd. As a means of diagnosis when held outside the eye by the movements impressed on a suspected body.

I have recently looked up surgical authorities to find whether the magnet has ever been used in the manner described in this paper, but the result of my search has been negative. In the works of Fabricius de Hildanus and Morgagni will be found notes of two cases in which the magnet was played with just as it is now-a-days by workers in foundries, to remove bodies from the surface of the cornea. For such a purpose it is unnecessary and unsuited. In fact a foreign body, if embedded in the cornea, cannot be removed by the most powerful magnet, unless the cornea have been softened by suppuration, and if it be lying, as it were, free on the surface the tip of the finger is a ready instrument. In all cases where a foreign body is sticking in the cornea the surgeon must resort to the knife or needle. The trials of the magnet in cases of this kind could only lead to disappointment, and the neglect of a remedy now shown to be of much value when applied in proper cases and in the right way.

A NEW METHOD OF USING SPONGE-TENTS.

DR. SEYFERT, Professor to the Gynæcological Hospital, describes and figures in *The Philadelphia Med. Times* (July 8th) "the nearest approach to a safe and reliable tent," which is due to the "inventive brain" of Dr. J. A. M'Farran. His instrument consists of a small metallic or hard rubber tube, holding upon its perforated extremity a sponge-tent which is completely enveloped by a closely-fitting, thin piece of india-rubber. The rubber, while permitting the sponge to dilate to its fullest extent, prevents it from absorbing fluids from the canal, and protects the cervical mucous membrane from abrasions. Water reaches the sponge through the tube, which has upon its vaginal extremity a distensible rubber ball for its reservoir. Instead of limiting the rubber covering to the tent, it may be made to envelope the entire apparatus, thus keeping the tube in constant contact with the water which, by entering the perforations made in the tube, readily finds its way to the sponge.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Cyclopædia of the Practice of Medicine. Edited by DR. H. VON ZIEMSSSEN. Vol. XI.—*Diseases of the Peripheral Cerebro-spinal Nerves.* London: Sampson Low, Marston, Searle, and Rivington, Crown Buildings, 188, Fleet-street. 1876. Pp. 623.

THIS fine volume, which is translated by Mr. Henry Power, of London, is the work of Professor Wilhelm Heinrich Erb, of Heidelberg, Baden. The professor, though still a young man, has much distinguished himself in the kindred specialities of electrotherapy and diseases of the nervous system. The volume is divided into two portions—the first and larger treating of Functional Diseases (neuroses) of the Peripheral Nerves; the second part dealing with the Anatomical Diseases of the Peripheral Nerves. This old-established division of the diseases of the nervous system into functional and organic cannot yet be altered with advantage. We meet, in the first place, with an extensive group of diseases of the peripheral nerves in which well-marked functional disturbances—as pain, anæsthesia, convulsion, paralysis, and the like—are present, and in which we are unable to point to any constant anatomical lesions; these are consequently termed *functional affections*, or “*neuroses*” of the peripheral nerves. In the second place we have a smaller group, comprising those in which there are distinct anatomical changes—as inflammatory and degenerative processes, and neoplastic formations—which are named “*anatomical*” or “*organic*” diseases of the peripheral nerves. The author candidly observes that the great progress that has been made in all departments of neuropathology in the course of the last ten years has been essentially in one direction—that is to say, the advance in our information has been almost exclusively limited to the accumulation of accurate descriptions of clinical phenomena and to the appropriate application of remedial measures. He appeals to the relatively small space devoted in the best recent text-books on nervous disorders to the anatomical, as compared with that which is devoted to the functional diseases of this system.

The following important physiological laws are briefly exposed—laws which, governing the normal sensory processes, frequently afford us welcome information in pathological conditions. The *law of isolated conduction*, according to which any excitation applied to a centripetal fibre, is conducted by this alone to the central apparatus, and is not transmitted to other adjoining fibres. The *law of excentric projection*, according to which excitations affecting either the central sensory apparatus itself, or any part of the centripetal conducting fibres, are referred by the mind to the peripheric extremities of the conducting fibre, from whence experience has shown that physiological stimuli usually proceed. Examples of this are found in the cases so frequently cited where irritations of the nerve-stumps of amputated limbs have been referred to their peripheric extremities, and cases where irritations of the centripetally-conducting fibres of the spinal cord or brain have been referred to the cutaneous surface of the limbs. The *law of associated sensation or irradiation*, according to which irritation of centripetal fibres in the central organ (probably through the intervention of ganglion cells in the gray substance) can be transferred to other centripetal paths, and thus excite co-sensations, which are again referred by the mind, in accordance with the laws of excentric projection, to the periphery. According to this law, the peripheral excitation of a centripetal fibre may be accompanied by a sensation in a more or less distant part of the periphery; as an example, the occurrence of an “irradiated” pain in the back on strong irritation in the region of the sciatic nerve. The *law of reflex action*, according to which irritations of centripetal fibres in the central organs (probably owing to the intervention of ganglionic apparatus in the gray substance) may be transferred to centrifugal fibres—motor, vaso-motor, and secretory nerves—and exhibit their special action at the periphery. These reflex actions take place according to laws that are accurately laid down, and play a great part in the phenomena accompanying sensory neuroses.

The author, in accordance with the practical character of his work, considers that at present all discussion with regard to the essence of pain is idle. He thinks the hypothesis most worthy of discussion is that advocated with so much ingenuity by Griesinger, which is to the effect that the essence of pain lies in “a disturbance of the organisation” of the nerve at some point in its course, but no step in advance is made by this hypothesis, because no such molecular changes are discernible by us, and because there is no

sharply-defined line of demarcation between the molecular change which we are now accustomed to consider accompanies every excitation, and that which accompanies pain-producing "disturbances of the organisation." The pathological anatomy of pain is an old and a strange secret. So obscure are the accounts of the older physicians as to neuralgia—*facile princeps* among pains—that it has been inferred that in former times it was comparatively rare. Nothing definite in regard to it is stated by Hippocrates. Aretæus is the first who gives a recognisable description of it, though without any accurate insight into its etiology, and the same may be said of Galen and Paulus Ægineta. In the Middle Ages, and even up to the middle of the eighteenth century, only imperfect description and recognition of neuralgia existed. The first correct explanation of neuralgia as a painful affection of the nerves dates from André, who, in 1756, first described "Tic douloureux."

In the etiology of neuralgia the predisposing and exciting causes are carefully discussed, and Anstie's views as to a *neuropathic hereditary predisposition* are fully noticed. By this phrase is understood a pathological constitution affecting the functional activity of the nervous system (Griesinger), by virtue of which those who are thus constituted manifest throughout life the most varied pathological symptoms in regard to sensory, motor, or psychical processes. No one has as yet been able to show in what this peculiar anomaly consists, and while some console themselves with the hypothesis of "delicate trophic disturbances," or "modifications of molecular arrangement," without thereby getting any nearer to the facts, we must rest satisfied with the fact that such constitutional neuropathies really exist, and that they play an important part in the history of neuralgia. After dwelling on the more familiar exciting causes, reference is made to neuralgia resulting from *overwork of the eyes*, and chiefly affecting the fifth nerve, to true neuralgia belonging to the secondary stages of syphilis, occurring with tolerable frequency, particularly in women, and affecting especially the supra-orbital and sciatic nerves. In strongly-mercurialised individuals we very frequently see obstinate and not easily curable neuralgias develop, which affect the body more or less generally. Both these forms are to be distinguished from the well-known *dolores osteocopi* (bone-shattering pains). It is worthy of note that in *malarial neuralgia* certain nerves, and especially the first branch of the fifth, are particularly liable to be affected. These malarial neuralgias have a well-marked periodic course, are often

accompanied by febrile phenomena, and yield very readily to anti-periodic means. From the frequent submission of any form of neuralgia to quinine, it is only in those cases where a tertian or quartan type is present that the malarial origin of the disease can be positively affirmed. The great majority of these malarial neuralgias, according to Griesinger, occur in somewhat advanced age—above the age of forty.

In making the diagnosis of an attack of neuralgic disease, it is in the first place requisite to determine *whether neuralgia is really present*. No term is more loosely or conveniently used. The difficulties, which are occasionally considerable, may, in general, be surmounted by recollecting that the following are essential and characteristic symptoms of neuralgia:—"1. That the pain is limited to a definite nerve-path, either trunk, branch, or area of distribution, and that it is usually confined to one side. 2. That the pain is, without any obvious reason, either intermitting, or at least distinctly remitting, in character. 3. That the pain presents very peculiar characters, and is extraordinarily acute. 4. That there are certain spots in the course of the nerve, or in the area of its distribution, that are very sensitive to pressure (points douloureux). 5. That the pain is associated with certain sensory, motor and vaso-motor, and secretory phenomena. 6. That the pain is unaccompanied by any inflammatory or local symptom, or any general disturbance of health at all corresponding with the amount of subjective disorder. The diagnosis will be greatly strengthened by the ascertainment of the various predisposing conditions. The painful affections, which are especially liable to be mistaken for neuralgia, are all those painful affections, "*myalgias*," that are localised in the muscles, *muscular pain*, *muscular rheumatism*, and which are known under the names of lumbago, pleurodynia, torticollis, and the like, and which arise either from catching cold or from over-exertion of the muscles. The diagnosis between such pains and the various forms of neuralgia is to be established by attention to the following points:—*Myalgia*, or muscular pain, corresponds to the position of a muscle, and not to the course of a nerve; it is fixed in some definite circumscribed area; it does not usually occur in paroxysms, and is caused and increased by every contraction of the affected muscle; local sensitiveness is only present over the extent of the affected muscle and its tendons. Professor Erb considers that in many cases it is a matter of taste whether the group of symptoms termed *spinal irritation* shall be

characterised as such or as neuralgia. The differential diagnostic point lies in the migratory character of the pain in spinal irritation. When the pains, he observes, are limited to a definite nerve, and there is also sensitiveness of one or two spinous processes, we assume the existence of a neuralgia with a well-marked apophysiary point; when the pains wander, leaping from one nerve-territory to another, whilst the hypersensitiveness to pressure affects first one and then another vertebra, we speak of the case as being one of spinal irritation. This distinction may be of considerable importance in the treatment, and the view is more tolerant than that of Romberg,* who speaks of *spinal irritation* as "a fantastic caricature dragged into neuropathology" "by certain English physicians who, to the present day, have failed to achieve a reputation in their native country."

The decision of the question, whether neuralgia is of central or peripheral origin, is one of the greatest importance, because neuralgic affections are in many cases the very first precursors of intrinsic disease in the brain or spinal cord. The recognition of the concomitant phenomena indicating disease of the brain or spinal cord demands the greatest care and the widest knowledge on the part of the physician. Benedict's attempts to determine the seat of a neuralgia, from the character and situation of the pain, are detailed. After a full consideration of this matter, the author observes that earnest endeavours must still be made to extend our knowledge in this direction.

The data upon which the prognosis of the curability and duration of neuralgia in any particular case should be more especially based are principally—the cause and seat of the disease; the particular nerves affected; the age and sex of the patient; the violence and frequency of the attacks, as well as the protracted duration of the whole complaint; and the existence of complications. The manner in which our opinion should be swayed by a consideration of these various matters is pointed out.

The treatment is discussed at great length. The physician who would most successfully respond to the earnest solicitations of his neuralgic patients must be thoroughly acquainted with, and possess a complete mastery over, all the resources for relieving pain, which have, undoubtedly, been increased in number of late years, and at the same time been rendered more precise. Prophylactic measures should be adopted by those who are predisposed to the disease.

* *Dis. of Nervous Syst.*, I, pp. 152, 154. Syd. Soc. Transl.

Good diet, abundant and nourishing, is of primary importance, and no apprehension need be entertained that such diet will prove too strong or stimulating. Regular and systematic exercise, as an essential correlate of abundant supplies of nourishing food, is a powerful strengthener of the nervous system. Plenty of sleep; pure fresh air; avoidance of stimulants; restraint of the sexual impulses at any cost, however difficult this may appear in many cases; systematic direction of the mind towards interesting and useful objects of study form the basis of measures which, if thoroughly carried out, will produce satisfactory results. Such nerve-invigorating treatment often strikes at the root of the *neuropathic diathesis*. Among *specific remedial measures* there are three groups of remedies that occupy the foremost place in the treatment of neuralgia, as being the most effective—1. *Electricity* in its various forms; 2. The *narcotics*, especially when applied hypodermically; 3. Certain *nervine specifics*, which experience has shown to be useful in many cases. *Electricity* has recently become the most important remedy in the treatment of neuralgia, in consequence of the brilliant success that has attended its application in many different forms of the disease, and in no other disease are the results of electro-therapeutical treatment so certainly established as in neuralgia. Of the two kinds of electricity now in constant use, the galvanic current (continuous current) is found to be the more active and applicable to a greater variety of forms of the disease than faradic electricity. Faradic electricity (the interrupted current) is chiefly useful in peripheric neuralgia, when the nerves can be reached by the current, and in cases where no remarkable anatomical change, as neuritis or the like, is present, and thus especially in the so-called purely idiopathic, or “habitual,” neuralgia. The *galvanic current* (continuous current) has at least the same action upon peripheric neuralgia, whilst, in addition, it is very effective in the central and deep-seated forms of the disease (spinal and cerebral neuralgias, and neuralgias of the roots of nerves). Moreover, by its “catalytic” effects—that is to say, by its influence on the vessels, upon exudations and the processes of nutrition—it exerts a wide influence on those neuralgias which are uninfluenced by the faradic current. There are two methods of applying *faradic electricity* (interrupted current)—*a*. By conducting a strong current of the secondary spiral, for a few minutes, through the nerve, by means of moist electrodes, one of them being placed on the nerve trunk as near as possible to its central origin; this plan must, for the most

part, be frequently repeated. *b.* By producing energetic irritation of the skin with an electric brush, or by means of an electric mona, in the region of distribution of the nerve, at its point of emergence, and over the *points douloureux*. The application of *galvanic electricity* (continuous current) is especially intended to modify the nutritive processes taking place in the nerve, to produce the so-called catalytic effects, and to lower the irritability of the nerves. The results of its application, either according to the polar or the direction method, seem to be equally good. In the polar method, the anode (positive electrode) is applied first upon the nerve trunk (when possible in the immediate vicinity of the proper focus of the disease), and then upon the *points douloureux*, and the cathode (negative electrode) upon some indifferent point. In the direction method, the descending direction of the current is used by preference, and the anode (positive electrode) is then to be placed upon the plexus, or upon the roots of the nerve, and the cathode (negative electrode) upon the nerve trunk and the painful points. As a rule, the duration of the sittings should be short, extending over from two to eight minutes, and repeated daily, or every other day. The strength of the current must, in general, be moderate. The effects are usually experienced at once, and continue for a variable period, from two or three to twenty-four hours, ultimately, after a variable number of sittings, becoming permanent. If, after a moderate number of sittings, as from six to ten, no appreciable benefit is experienced, the case must, in general, be regarded as one not adapted for the electrical plan of treatment.

Narcotics (and *anæsthetics*) constitute palliative means of treating neuralgia that are uncommonly certain and agreeable in their mode of action, and are unsurpassed by any remedies, especially when used subcutaneously. When a decided local action is intended, as is usually the case in neuralgia, the injection should be made as near as possible to the nerve trunk affected, or into the painful point. Injections of morphia are contra-indicated in cases of great debility, in advanced age, hyperæmia of the brain, and organic disease of the heart. *Atropine* alone, of the other narcotics, deserves special mention; it exerts an anti-neuralgic effect similar to that of morphia, and may even prove serviceable when the latter fails. The dose for injection ranges from the one one-hundred-and-thirtieth to the one twenty-second of a grain. Although but little confidence can be placed in the effects of the *external application* of

narcotic remedies, we cannot, however, afford to dispense entirely with the use of narcotic ointments and embrocations in ordinary practice, since it cannot be denied that their application is often followed by favourable results. Chloroform may be used in the form of inhalations, or internally, or in the form of an enema, in which both ether and chloroform can be given in doses of from fifteen to twenty minims suspended in starch paste. Administered in this form, they may be ordered in neuralgia of the sacral plexus or of the pelvic nerves. Although hydrate of chloral may be ineffective in cases of severe neuralgia, its well-marked hypnotic action is useful in many cases, and for this purpose it may be advantageously combined with small doses of morphia, in the proportion, for example, of fifteen grains of chloral to one-sixth of a grain of morphia.

The group of *specific remedies* includes a great variety of remedial measures, some of which have been discovered empirically, and their value demonstrated by experience; others of which are the outcome of physiological researches or pathological considerations. The influence of some of these specifics is undoubted, and has been satisfactorily established by the testimony of excellent observers. In the very first rank amongst specific remedies is to be placed *arsenic*, which acts not only as an anti-periodic remedy in neuralgias of malarial origin, but also as a proper nervine tonic. It is especially effective in cases where there is a general nervous diathesis and imperfect formation of blood. In such cases Fowler's solution may be given in doses of from three to ten drops three times a day, in gradually increasing doses, or the arsenious acid may be given dissolved in water, in doses of from one-eighth to one-half of a grain per diem, in divided doses. Recently arsenic has been injected hypodermically (Eulenberg), and there are certain advantages in this method of using the remedy. *Zinc*, in the form of oxide, or of valerianate, or of sulphate, if used, must be prescribed in large doses. *Phosphorus* is warmly recommended, especially in anæmic and neurasthenic neuralgias. The preparations of *iron* are of undeniable value in the anæmic forms of neuralgia. The preparation to be employed must be decided by the practitioner, and on this point there is a legitimate difference of opinion—for example, according to Anstie,* “the carbonate, in large doses, is the best form, when iron is needed at all;” whereas Erb says, “the carbonate of iron in particular, which was formerly given in such

* *System of Medicine*. Reynolds. Vol. II., p. 745.

enormous doses, appears to possess no specific action on neuralgia." *Quinine* has a very decided action on neuralgias, even where they are not dependent on malaria. *Strychnia* is highly praised, whether given internally or injected hypodermically, and it may be given combined with the solution of chloride of iron. *Iodide of potassium* proves serviceable in many cases of neuralgia, as in those of chronic rheumatic character, and in very obstinate idiopathic cases. *Bromide of potassium* is extremely valuable, especially in cases where it produces an hypnotic effect. The author coincides with Anstie's opinion of its utility in neuralgia attacking those who, whilst otherwise in good health, exhibit a certain restlessness and irritability of disposition, which is often the consequence of insufficient gratification of the sexual passion, as in women condemned to celibacy; and he observes that but little experience in the treatment of the somewhat more matured women of the better educated classes is required to demonstrate the use of his (Anstie's) practical observations on this point. As in epilepsy, large doses are requisite.

The foregoing notice can hardly convey any adequate impression of the value of the volume alluded to. It would be impossible, unless at extreme length, even to epitomise the information upon the various forms of nervous disease it contains. The volume is one of the best yet issued of the *Cyclopædia*, and cannot fail to raise the series to the highest rank among the medical publications of modern times.

ARTHUR WYNNE FOOT.

Lectures on State Medicine. Delivered before the Society of Apothecaries. By F. S. B. F. DE CHAUMONT, M.D., F.R.C.S.E., Joint Professor of Military Hygiene, Army Medical School, Netley. London: Smith, Elder, & Co. 1875. Large 8vo, pp. 196.

THIS volume consists of six lectures, delivered in May and June, 1875, before the English Society of Apothecaries. The information given is imparted in a very agreeable, taking style, but, at the same time, not in that loose manner which distinguishes so many of so-called "popular works." The subjects treated of are the history of sanitation, enactments relating to public health, ventilation, water supplies, soil in relation to health, the sewage question, disposal of the dead, food, exercise, vital statistics, prevention of

disease, epidemics, &c. A very fair amount of information is imparted in relation to these subjects, and though they are by no means exhaustively treated, yet they are in many respects examined with an amount of originality which one might expect from so eminent a sanitarian as the author.

We find that Dr. De Chaumont is in favour of cremation as the best means of disposing of the dead; but we think that the policy of consigning the remnants of mortality to the earth, as practised in all civilised countries, has been fully vindicated in the admirable Report on that subject, published in 1875, by the Board of Health of Massachusetts.

Army Medical Report for 1873. Vol. XV. London. 1875.
Pp. 508.

WE have only recently received this volume, for though it relates to the events of 1873, it was only published in 1875, and actually sent out in 1876. This delay in publishing the Report arises chiefly from the fact that the British army is scattered all over the world, and, therefore, the statistics in relation to it can only be gathered in very slowly. In addition to the usual information relating to the health of the army at home and abroad, the report contains several valuable papers on special subjects, by Drs. Parkes, Porter, Gore, Nicholson, &c., some of which will be taken advantage of in our "Reports on Public Health."

Army Medical Report for 1874. Pp. 220.

THIS volume followed closely its immediate predecessor. In addition to the usual statistics relating to the health of the army contained in this volume, we find in it five papers on various subjects by Dr. Porter, and one on the topography of districts near the Persian Gulf by Dr. Evatt.

Des Propriétés Physiologiques de Bromure de Camphre. Par LOUIS PATHAULT. Paris: Delahaye. 1875.

THIS pamphlet conveys, in a convenient form for reference, the information relating to this new aspirant for notice up to the date of its publication. The author made some personal observations on himself, respecting the elimination of this substance by the kidneys.

PART III.

HALF-YEARLY REPORTS.

REPORT ON

MATERIA MEDICA AND THERAPEUTICS.

By WALTER G. SMITH, M.D., Dublin; F.K.Q.C.P.I.; Assistant-Physician to the Adelaide Hospital.

ART. 3. Boracic Acid.

„ 5. Chloral.

„ 2. Chloride of Zinc; Oxalic Acid—poisoning by.

„ 1. *Pilula Hydrargyri*.

„ 4. Vaseline.

1. *Pilula Hydrargyri*.—It has often been stated that the medicinal activity of those mercurials in which the mercury is used in the metallic form, and in a minute state of division, is due chiefly to a small quantity of oxide formed by contact with the air, and Mr. Harold Senier has communicated to the Pharmaceutical Society of Great Britain some interesting experiments on this matter, from a pharmaceutical point of view. He obtained, from leading London manufacturers, several samples of *Pilula Hydrargyri*, B. P., and submitted them to chemical examination for (a) *mercuric oxide*; (b) *mercurous oxide*; (c) *metallic mercury*; (d) *ash*; and (e) *organic matter and moisture*. The following table gives a *résumé* of the percentage results obtained in the case of nine samples. The second column gives the age, as nearly as it could be ascertained:—

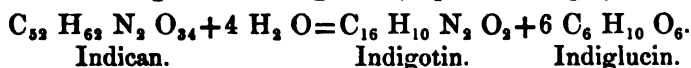
Composition of Pilula Hydrargyri.

| — | Age | Metallic Mercury | Mercuric Oxide | Mercurous Oxide | Ash | Organic Matter |
|---|-----------|------------------|----------------|-----------------|------|----------------|
| 1 | 18 hours | 32·49 | none | a trace | 1·20 | 66·31 |
| 2 | 5 weeks | 32·26 | 0·09 | 0·25 | 1·20 | 66·20 |
| 3 | 3 months | 31·60 | 0·24 | 0·62 | 1·18 | 66·36 |
| 4 | 3 months | 31·15 | 0·44 | 1·60 | 1·12 | 65·69 |
| 5 | 6 months | 32·44 | 0·50 | 0·80 | 1·70 | 64·56 |
| 6 | 14 months | 29·86 | 0·98 | 2·60 | 1·20 | 65·36 |
| 7 | 19 months | 31·59 | 0·50 | 2·50 | 1·00 | 64·41 |
| 8 | 2 years | 28·40 | 1·80 | 4·22 | 2·10 | 63·48 |
| 9 | 1 | 30·23 | 1·06 | 3·24 | 1·05 | 64·42 |

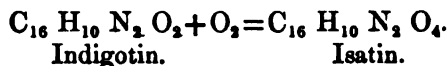
The proportion of mercury present, considering that which occurs with oxygen as well as that existing in the uncombined state, does not vary much from the requirements of the Pharmacopœia, $\frac{1}{3}$ mercury, $\frac{2}{3}$ organic matter. It will be noticed that the proportion of mercurous oxide very much exceeds that of mercuric oxide, and that the proportion of both increases with the age of the sample. No. 7 is somewhat exceptional, as regards this relation of age to proportion of oxides, but in this case globules of mercury were plainly visible to the naked eye, which fact may account for the slowness of the specimen in becoming oxidised. No. 3 is the only sample of hand-made mass, hence it might be expected to be less oxidised than the others, all the rest having been made by machinery. It is clear from these experiments that if, as has been stated, the therapeutic action of *pilula hydrargyri* depends largely upon the proportion of oxides present, the age of the mass becomes a matter of primary importance, and that the practitioner, in prescribing blue pill, is ordering a medicine liable to vary considerably in composition, and probably liable to vary as considerably in medicinal efficacy. In the discussion which followed the reading of Mr. Senier's paper, Professor Redwood referred to an inquiry which he had made, fourteen or fifteen years ago, with reference to *hydrargyrum cum cretâ*, and reminded the meeting that the extent of oxidation in grey powder was very much greater than occurred in the case of blue pill. He found that, in some specimens, the mercury in the metallic state had fallen from 33 per cent. to 13 per cent.; whilst of mercuric oxide there was as much as 14 per cent., and of mercurous oxide between 11 and 12 per cent. That was a very marked difference, as compared with anything that was adduced with reference to blue pill, and spoke in favour of the latter preparation. The investigation relating to grey powder originated in complaints having been made that this preparation, formerly looked upon as a mild one suitable for children, was liable to provoke violent attacks of griping and sickness. These untoward results are due to the presence of oxides of mercury (especially Hg O), produced chiefly by the modern process of manufacture—i.e., intimate trituration in contact with air, by means of steam machinery.—*Pharm. Journ.*, Feb. 5, 1876.

2. *Poisoning.*—(a.) *By Acid Solution of Chloride of Zinc.*—MM. Bovet and Gautrelet report a case of poisoning by this salt, under the care of M. Hayem, in which the condition of the urine was of

interest. A woman was admitted into hospital shortly after swallowing the poison, presenting the symptoms of swelling of the throat, almost complete inability to swallow, burning pain in the stomach, abundant cold sweats, and nearly total retention of urine. Notwithstanding treatment, she succumbed forty-six hours after taking the poison. The urine, which was collected from the time of admission, was coloured dark orange-red, and contained an excess of free HCl. Chloride of zinc was found in the contents of the stomach. The urine, when treated with nitric acid in the cold, gave no reaction; but, under the influence of heat, it first reddened, then turned black, and finally deposited abundantly a blackish-brown resinoid matter, soluble in ammonia, alcohol, and chloroform. From the chloroformic solution pale yellow needles crystallised out, while the supernatant aqueous liquid assumed a red colour. From these circumstances it may be concluded that the urine contained a notable amount of colouring matter which agreed in its reactions with *indican*. For, under the influence of HCl, indican is transformed into indigotin and indiglucon (a species of sugar):—



Under the influence of nitric acid, the indigotin is oxidised and isatin is formed:—



The prolonged action of nitric acid, with the aid of heat, yielded the brown resinoid matter, which chloroform separated into isatin (soluble in the aqueous liquid), and indigotic (nitro-salicylic) acid, which crystallised from its chloroformic solution. Although the presence of indican in certain pathological urines, and even in normal urine, is a recognised fact, yet the large quantity of this body found in the present case is deserving of note.—(*Répertoire de Pharm.*, 25 Févr., 1876.)

(b.) *By Oxalic Acid.*—Some time ago M. Vande Vyvere was requested to analyse the viscera of a woman who had taken 30 grammes of oxalic acid in lieu of sulphate of magnesium. At the autopsy, the anatomical lesions were those usually met with in cases of oxalic acid poisoning. But, in analysing a portion of the intestines, M. Vande Vyvere observed a phenomenon of considerable interest which is not alluded to in the treatises on toxicology, and to which he invites the attention of experts. Having added

hydrate of quinine to the finely divided portion of intestine submitted to examination, oxalate of quinine was separated. On the further addition of ammonia, with a view to the formation of ammoniacal oxalate, he was surprised at getting a beautiful reddish-purple coloration, disappearing under excess of ammonia, and turning deep orange yellow; phenomena observed when ammonia is added to uric acid oxidised by nitric acid. Puzzled at first as to the cause of this unexpected coloration, he soon learned that Liebig had recognised the presence of *alloxan* in the animal economy by submitting to dialysis a gelatinous matter which is produced in intestinal catarrh. This coloration, belonging to purpurate of ammonium (murexid), could come only from the presence of this body (alloxan) or one of its derivatives in the intestine—the pathological state of which, owing to the action of oxalic acid, was similar to that found in intestinal catarrh. Some of the intestine of the present case being submitted to dialysis, the residue left on evaporation struck a fine reddish purple colour when exposed to ammoniacal fumes. But, since pure alloxan, free from alloxantin, does not yield murexid with caustic ammonia, whereas the latter body alone, or mixed with alloxan does, it follows that the intestines must have contained alloxantin. The alloxantin ($C_8 H_4 N_4 O_7$) was probably produced by the action of the oxalic acid on the alloxan ($C_4 H_2 N_2 O_4$). The following experiment more or less confirms this hypothesis. A certain quantity of the intestine, together with the acid liquor bathing it, was treated with boiling water; the solution filtered and evaporated to one-fourth. On allowing it to cool and stand, it deposited a slight sediment, which, when separated from the supernatant liquid, gave, with baryta water, a violet colour, passing into white, a character peculiar to alloxantin. The author concludes his paper by remarking that the presence of alloxantin in the intestine is a fact which has not, to his knowledge, been yet recorded.—(*Journ. des Connaiss. Méd.*, 15 Juin, 1876.)

3. *Boracic acid*.—Dr. Leonard Cane wishes to draw attention to the virtues of boracic acid as a *simple* dressing for wounds of all kinds, altogether apart from the antiseptic system, strictly so called. The most convenient forms for use are the boracic (boric) lint and cotton wool, a concentrated watery solution of the acid, and boracic ointment. Boracic lint is prepared by soaking lint in a saturated boiling solution of the acid. On drying the lint a

copious deposit of fine flaky crystals takes place between its fibres. Cotton wool may be similarly served, and when dried and carefully picked out forms a very useful dressing. The concentrated solution is made by dissolving the acid in boiling water to saturation. The ointment is made by rubbing down one drachm of the acid with one ounce of simple ointment or benzoated lard. Boracic acid, unlike most antiseptic agents, is bland and unirritating; and whilst its non-volatility renders it less useful in some cases than carbolic acid, its great superiority to this acid and to chloride of zinc resides in its unirritating nature. The boracic lint is best used as a dry dressing. For recent wounds, where simplicity is desired, it has no equal, and union by first intention is a common result. For boils on the neck and elsewhere the boracic lint is an excellent application; a piece large enough to hide the boil, and covered with a piece of gutta-percha tissue, often gives great relief. For carbuncles and other cases in which it is desired to apply a poultice, the new "instantaneous poultice," prepared from Iceland moss by Messrs. Rigollot, is a capital and efficient remedy. The poultice should be prepared by soaking it for a short time in the boracic lotion, and, when applied, should be covered with gutta-percha tissue.

Lastly, in some of the vegetable parasitic diseases, such as pityriasis (tinea) versicolor, tinea circinata, &c., the boracic lotion and ointment will often be found serviceable.

Briefly to sum up the advantages of boracic acid:—

1. It is an antiseptic which does not irritate and inflame, and so allows the natural processes of healing to go on without much interruption.

2. It is exceedingly simple in its application, and can be used apart from all the details required by a thoroughly antiseptic method.

3. It can be used in the shape of the lint lotion, cotton-wool, &c., in combination with most other methods of treatment.

4. Its cost is trifling; and though this is of secondary importance, it is a feature of the treatment which will recommend its employment in workhouse infirmaries and in dispensary and parish practice.—*Med. and Surg. Rep.*, June 17, 1876, from *Lancet*.

4. *Vaseline*.—Under the name of vaseline a substance has recently been introduced into this country from America as possessing properties which recommend it as a basis, in many respects

superior to ordinary fats and oils, for ointments, cerates, and like preparations, and Messrs. Moss and Gerrard contribute to our knowledge of it in *Pharm. Journ.*, Feb. 5, 1876. Vaseline is a pale yellow, translucent, slightly fluorescent, semi-solid, melting at about 37° C. Sp. gr., .840 at 55° C. It is inodorous, non-volatile at ordinary temperatures, but distils with slight decomposition under pressure. It is insoluble in water, slightly soluble in alcohol, freely in ether, and is miscible in all proportions when melted with fixed or volatile oils. It mixes in all proportions with glycerin of the ordinary strength, but the mixture is destroyed by addition of water. Hydrochloric acid and liquor potassæ are without action on it. It is chemically neutral and unoxidisable, and has, therefore, the desirable and important quality of freedom from rancidity, which is the most objectionable property of the fats in ordinary use. Applied to the skin or an open wound, it is said to be readily absorbed, occasioning neither pain nor irritation. Mr. Moss states that vaseline was first brought directly before his notice at Edinburgh last summer by Prof. Otis, of New York. This gentleman informed him that vaseline was largely used in the United States as a basis for ointments, and by himself for lubricating surgical instruments prior to their introduction. The chemical experiments instituted by Mr. Moss all point in the same direction, and show that vaseline is not a single body, but must be regarded as a distinctive name for a mixture of paraffins* obtained by a known process.

The properties of vaseline on which greatest stress is laid, are its indifference to reagents, and its unchangeableness on exposure to the air. Ointments which are liable to change, such as those of iodides of potassium and of sulphur, when prepared with vaseline as the basis, and kept in loosely-covered pots, are not altered at the end of ten weeks (Moss). It seems to supply what has been a desideratum ever since the first unguent was used—a bland, inodorous, unchangeable, agreeable basis. In the United States it is largely used as a pomade, and it will take any perfume.

Mr. Gerrard proposes a mixture of one part paraffin and four parts vaseline as forming an excellent basis for the construction of

* Paraffin is a name originally given to the solid members of the C_nH_{2n+2} series of hydrocarbons, on account of their chemical indifference (*parum affinis*), but in compliance with a suggestion by Henry Watts, it is now applied as a generic term to all the members of that series, whether solid, liquid, or gaseous. Paraffins are *saturated hydrocarbons*, and hence are incapable of uniting with other bodies.

suppositories, but Mr. Martindale does not think that such a mixture would possess any advantage over the ordinary oil of theobroma for this purpose.

At the meeting where the above papers were read, various samples of ointments illustrating the conservative properties of vaseline were shown. A specimen of citrine ointment, diluted with seven parts of vaseline, which was made on November 14th, was still bright in colour, and unoxidised—a result which would not have been obtained with the B. P. formula. It is also well known that the ordinary ointments of zinc and lead soon become rancid, but when prepared with vaseline, they will keep fresh for any length of time. Similarly, ointment of red or yellow oxide of mercury. Mr. Gale further exhibited samples of ointments prepared with vaseline, and confirmed Mr. Martindale's statements.

5. *Chloral*—(a) *Butyl (croton)-Chloral*.^a—In a recent article in the *Deutsche Medicinische Wochenschrift*, Dr. Oscar Liebreich states that Messrs. Krämer and Pinner, in the course of their researches on the substance commonly called croton-chloral, have ascertained that it contains two more atoms of hydrogen than was supposed, and that it is in fact butyl-chloral. When soda or another alkali is mixed with it, it undergoes decomposition—chloride of sodium, formiate of soda, and bichlorallylene being produced.

The physiological action of butyl-chloral is, Dr. Liebreich has ascertained from a large number of experiments, very constant. In rabbits anæsthesia is always found to commence at the head, a state of hypnotism having been already produced. The animals, while sitting quietly, let the head drop; and anæsthesia of this part now appears, while reflex action can be excited in the limbs; from the head the anæsthesia spreads over the body, and reflex action is not caused by irritation. The respiration and pulse become slow; and, with a fatal dose, the respiration ceases before the pulse. The *post mortem* appearances differ from those of poisoning by chloral. In that from the latter, paralysis of the heart is found, both ventricles being full of blood; while in death from butyl-chloral the left ventricle is contracted and nearly empty, the right cavities and the lungs being charged with blood. With this difference in the *post mortem* appearance corresponds the difference in the mode of death; in chloral-narcosis general anæsthesia is rapidly produced—i.e., the action of a large dose passes quickly

^a From the *British Medical Journal*, February 12.

from the cerebrum to the medulla oblongata, and the heart's action ceases while the respiratory movements continue.

In chloral poisoning, Dr. Liebreich says that artificial respiration is useless; the heart's action can only be restored by the action of strychnia on the cardiac ganglia. With butyl-chloral, on the other hand, the heart's action can be re-excited by artificial respiration. This may be seen in an animal whose thorax has been opened during the narcosis.

Chloral, then, causes death by interfering with the cardiac ganglia; butyl-chloral, by its action on the respiratory centre. And just as the ganglion cells of the heart are stimulated by strychnia, so continued artificial respiration overcomes the narcosis of the medulla oblongata.

Dr. Liebreich points out, as a fact of practical importance, that the duration of the stages in the narcosis produced by butyl-chloral is about two-thirds less than in that produced by chloral.

In man, as in animals, anæsthesia commences at the head, while reflex action can still be excited on the limbs. Some experiments on a child, detailed by Dr. Liebreich, show that even in the waking state there is anæsthesia of the cornea, while the nasal mucous membrane is still irritable. With a dose of chloral sufficient to produce anæsthesia of the eye, there would also be general anæsthesia of the whole body.

Doses of butyl-chloral sufficient merely to produce anæsthesia of the head do not essentially affect the pulse and respiration. In insane adults, Dr. Liebreich has found doses up to five grammes to produce sleep and anæsthesia of the head, with maintenance of the muscular tonus and of reflex action in the trunk, so that the patients remained sitting while the head was perfectly anæsthetic.

Though as yet unable to adduce any practical experience on the subject, Dr. Liebreich believes that butyl-chloral may be very useful as an anæsthetic in operations on the head, especially when, as is sometimes the case, it is impossible to give anæsthetics by inhalation.

The practical value of butyl-chloral, Dr. Liebreich says, lies in its property of diminishing sensibility before producing narcosis. He entertained the hope at first that it would be useful in tic-douloureux; and in the cases in which he has given it, he has, he says, certainly observed relief of the pain, but not an arrest or cure of the malady. The action of butyl-chloral is of less duration than that of morphia; a comparison of the general effects of the

two remedies indicates that butyl-chloral should be preferred to morphia or combined with it. Dr. Liebreich observed the action of butyl-chloral in a most marked manner in two cases of tic, in which the tenderness was so great that the patients could not bear to touch the painful parts of the face, or to bring a handkerchief near their noses. A gramme of butyl-chloral produced complete relief, lasting generally for two hours, each time that the dose was repeated.

Regarding the mode of administration of butyl-chloral, Dr. Liebreich says that he tried an alcoholic solution; but he has found that, after long standing, some change takes place which greatly impairs the action of the butyl-chloral. He now orders it in the following form:—Butyl-chloral hydrate, 5 to 10 parts; glycerin, 20 parts; distilled water, 130 parts. The mixture requires to be shaken before being used. The dose is half an ounce, followed in five minutes by a second, and in ten minutes by a third. It is well to begin with a small dose, so as to avoid producing hypnotism—that is, where the anæsthetic effect alone is desired. To produce sleep, one, two, or three grammes (15 to 45 grains), according to the patient's constitution, are to be given at bed-time.

Butyl-chloral gives relief in painful affections of the teeth, but, of course, a radical cure can only be effected by attacking the cause of the disease. It should, whenever possible, be taken after meals, and be followed by a copious draught of water.

Whether any advantage is to be derived from combining butyl-chloral with ordinary chloral or with alkaloids, must be decided by further experiments.—*Pharm. Journ.*, Feb. 19, 1876.

For other details respecting butyl (croton)-chloral, see *Reports* for 1873–74–75.

(b.) *Ordinary (ethyl) Chloral*.—Although it was only on account of its uses for internal purposes that chloral was introduced into the Additions to the B. P., 1874, yet within the past two years many observations have accumulated which clearly prove that, in addition to its hypnotic effects, chloral is a powerful antiseptic, and, as such, might be used for a variety of purposes. Some of these uses were alluded to in the *Report*, August, 1874. Dr. William Craig has been working at this point for nearly two years, and lately communicated his results to the Pharmaceutical Society, Edinburgh. Various experiments, of a somewhat crude nature, performed on vegetable substances, showed that many flowers and leaves may

easily be preserved in a weak solution of hydrate of chloral (1—1½ grs. to 3i.) for some weeks or even months, and in some instances years, without losing either their form or colour, and consequently could be sent even from a distant country in such a state that they could readily be figured by an artist, or examined and described by a botanist. As regards animal tissues Dr. Craig has been investigating this subject since August, 1874, and classifies the results of his investigations under the three following heads:—

“1. Solution of chloral as a preservative fluid for injecting bodies for the dissecting rooms.

“2. Solution of chloral as a preservative fluid for anatomical specimens, and,

“3. Solution of chloral as a dressing for wounds and ulcers.

“I.—*Solution of Chloral as a Preservative Fluid for injecting bodies for the dissecting room.*—During the session 1874–75, through the kindness of Professor Turner, several bodies were injected with solutions of the hydrate of chloral, and afterwards placed in the dissecting rooms of the University of Edinburgh. The injections were made by Mr. Stirling, Assistant-Keeper of the Anatomical Museum, and the bodies were carefully watched during the whole time that they remained in the dissecting rooms by Drs. Russell and Cunningham, Demonstrators of Anatomy. About 90 grains of the hydrate of chloral, dissolved in water, were injected into each body. The results observed were much the same in all the bodies. The subjects injected with chloral were as well preserved from putrefaction as were those injected with the ordinary preserving fluids, and when the parts were protected from the air, the colour of the parts was remarkably well preserved. This was specially true of the skin. In bodies injected with chloral, the delicate plexuses of nerves could be more easily and more successfully dissected out than when injected with other preservative fluids, partly owing to the fact that the muscles and other tissues were softer, and consequently the nerves could be more easily dissected out. When the bodies injected with chloral were carelessly exposed to the air, they became much darker in colour. Bodies injected with chloral gave off a peculiar mawkish odour, which was rather disagreeable to the students.

“II.—*Solution of Chloral as a Preservative Fluid for Anatomical Specimens.*—The hydrate of chloral dissolved in water forms an excellent fluid in which to preserve animal tissues. In this respect its virtues as an antiseptic are well marked. Amongst other preparations—

“(1.) I show a wen which I removed from the head of a patient in August, 1874, and which is preserved in an ounce of water containing 5

grains of the hydrate of chloral dissolved in it. The specimen is well preserved.

"(2.) I show also a small fœtus, which you will perceive is beautifully preserved. It has been kept for nine months.

"(3.) I next show the heart, lungs, liver, kidneys, and other parts of the abdominal viscera of a rabbit, preserved in the same fluid. These were put up in December, 1874.

"(4.) I also show three minnows, preserved in a chloral solution. They have now been nearly fourteen months in the bottle, and you will see that they are much better preserved than would have been the case had they been preserved in spirit.

"(5.) I show part of tapeworm from the intestine of a hare, which has been in a solution of chloral since December, 1874. It is excellently preserved.

"Solutions of the hydrate of chloral do not coagulate the albumen of the tissues, and, consequently, delicate transparent membranes are better preserved by chloral than by spirit or carbolic acid. There can be no doubt but, as a preservative fluid for anatomical specimens, it is superior to spirit, if not to every known antiseptic. It is much cheaper than methylated spirit, and is destitute of the disagreeable odour of that fluid.

"I would strongly recommend a solution of hydrate of chloral for preserving wet microscopic specimens. The solution is perfectly colourless, very cheap, and very fluid.

"III. *Chloral as a Dressing for Wounds and Ulcers.*—I have tried chloral extensively as an external application to wounds and abraded surfaces. I found as the result of these experiments that a lotion containing from 5 to 15 grains of the hydrate of chloral to the ounce of water formed an excellent dressing to ulcers and wounds, dressed with lint and gutta-percha in the ordinary manner. I could relate many cases, but I will select only one. A young lad, T. M., lately one of the boys in the Mars training ship, had one of his legs severely burned, and after being treated by the surgeon in charge of the ship for three months, the boy was recommended to go into Dundee Hospital to have the limb amputated below the knee. As T. M. was within a fortnight of receiving his discharge from the ship, he was allowed to visit his friends at Edinburgh, who were unwilling that the leg should be amputated, and put the boy under my care. I saw him in April last, and found a large ulcer on the leg, extending from a little below the knee to the middle of the foot, and several inches in breadth. The edges were very irregular, and a considerable amount of foetid discharge came from the ulcer. The boy and his friends were very anxious that I would try and preserve the limb. I ordered a lotion containing 15 grains of the hydrate of chloral to the ounce of water, some chloral lint, such as is manufactured by

J. F. Macfarlan and Co., of this city, as recommended by Dr. P. H. Watson, and some gutta-percha, and gave instructions for having the limb dressed twice daily with these. I may mention that previously it had been dressed with some preparation of carbolic acid. After the chloral dressing the limb healed rapidly. The ulcer got gradually less, the foetid discharge disappeared; and when I saw the patient in July last, only a small ulcer remained, and even that was gradually diminishing in size, notwithstanding the fact that the boy was daily employed in a large drapery shop in town, and was unable to give the leg that rest which was necessary, and which I had so much recommended. The boy is now a sailor. I also used chloral solution as an injection into the sacs of large abscesses, and found that it tended much to diminish secretion and make the parts heal.

"I have also found the solution of chloral hydrate a most useful application to burns in which there was foetid discharge from the wounds. When chloral solution is applied to such burns they not only heal rapidly but the foetor speedily disappears.

"I also used it as a lotion to sore nipples and to inflamed mucous membranes. When chloral is applied to an ulcer, a wound, or to the interior of an abscess sac, it causes at first some smarting, but that only lasts for a few minutes, and is soon succeeded by a most agreeable sensation. Patients so treated have frequently told me that soon after the lotion was applied a very agreeable soothing effect was felt in the wound. I believe that in all such cases chloral acts as a local sedative. It produces anaesthesia of the nerves of the part. Wherever there is a wound or ulcer there is irritability of the nerves of that part; and chloral, by soothing this irritability of the nerves, favours the healing process.

"I have frequently used with good effect an ointment containing 30 to 60 grains of the hydrate of chloral to the ounce in eczema and other allied affections. I believe it to be one of the best applications in such diseases; and a medical practitioner lately told me that he had used it with marked benefit as a local application during an attack of erysipelas of the head. Chloral in various forms has been extensively used in the royal infirmary of this city by Dr. P. H. Watson, senior surgeon to that institution."—(*Pharm. Journ.*, April 1, 1876.)

For a summary of recent therapeutic experience of chloral, see Dr. Handsel Griffiths' Report.—(*Edin. Med. Journ.*, March, 1876.)

The author of this Report, desirous that no contribution to the subjects of *Materia Medica* and *Therapeutics* should remain unnoticed, will be glad to receive any publications which treat of them. If sent to the correspondents of the Journal, they will be forwarded.

REPORT ON PUBLIC HEALTH.*

By CHARLES A. CAMERON, M.D., Fellow and Professor of Chemistry and Hygiene, Royal College of Surgeons, Ireland; Medical Officer of Health and Analyst for Dublin, &c., &c.

[Continued from page 146].

DISINFECTANTS.

IN one of the valuable appendices to a Report of Dr. Simon, Medical Officer of the Privy Council, Dr. Baxter gives us the results of "an experimental study of certain disinfectants." The first portion of the paper is devoted to the consideration of the intimate nature of contagion; and in this the writer does not advance any new theories or detail facts not hitherto observed. We agree with the opinion that there is no real distinction between contagion and infection. In the case of infection actual contact between the sick and the healthy may be necessary in order to propagate disease from the former to the latter, whilst the *materies morbi* (contagion) of such diseases as scarlatina and small-pox may be propagated through the air. Every malady, however, that is capable of being propagated from one person to another is contagious; in some diseases the poison is only propagated through short distances, in other maladies it may be conveyed to immense distances. The virus of typhoid does not spread, except rarely, through the air, but it may be conveyed many miles through the agency of water. Some diseases, undoubtedly contagious, require direct personal contact in order to effect their propagation. Syphilis and gonorrhœa are thus spread. In the common itch we have isolated the *materies morbi*, and find it to be a living thing of sensible magnitude. Itch is contagious, and can be conveyed by contact with the bodies of those affected by it, or even with their clothes, but the malady is not propagated through the air. Typhus poison does not travel far, whilst the virus of scarlatina spreads widely. It is, therefore, better to discard the word infection, and to include under the head of contagious diseases all

* The author of this Report will be glad to receive any books, pamphlets, or papers relating to hygiene, dietetics &c. They may be forwarded through the agencies of this Journal.

maladies that are propagated from person to person, directly or indirectly.

There are very few contagious diseases the poisons of which have been isolated, but analogical and other reasons lead us to consider that every disease of the kind is caused by the introduction of a specific poison into the system. These poisons, there is every reason to believe, are not gases or vapours, but insoluble solid matters, of such extreme minuteness that hitherto most of them have evaded detection. These solid bodies may, however, be conveyed from the sick to the healthy by the agencies of other matters, some of which are gases or vapours, others liquids, and a few are solids. This being the case, it is obvious that the agents which are employed to destroy contagion should, as Dr. Baxter remarks, vary in nature and mode of application, according as they are to be brought to act on air, liquid, or solid. A liquid disinfectant might act powerfully upon a solid vehicle of contagion, and have no effect upon an infected atmosphere. Dr. Baxter states that a consideration of the medium in which contagious particles are suspended might unravel some perplexities, and account for apparent discrepancies which have been observed by those who have made a study of disinfection.

Dr. Baxter's experiments were conducted with only four out of the multitude of substances termed disinfectants. These were potassic permanganate, sulphur dioxide (sulphurous acid), chlorine, and carbolic acid. The permanganate solution was prepared by the dissolution of crystals of the salt in distilled water. Pure crystallised carbolic acid was used, and this also was dissolved in distilled water. The chlorine was prepared in the usual manner (*i.e.*, by acting upon manganic dioxide by hydrochloric acid), and was preserved in distilled water contained in a black bottle kept cold. The sulphurous acid was obtained by acting upon copper turnings by concentrated sulphuric acid. Great care was taken to have the solutions of chlorine and sulphurous acid of known strength, and they were renewed from time to time for that purpose.

The disinfecting action of the agents named was tried upon vaccine lymph, the virus of infective inflammation in Guinea pigs, and the virus of glanders. The virus of vaccine is specific, and cannot be produced at will; so, also, with the poison of glanders. The virus of infective inflammation in the Guinea pig is not specific, and can be produced *de novo*. It is, however, capable of increasing indefinitely in organisms affected by it, and its patho-

logical effects are tolerably constant. Dr. Baxter selected this virus because it could be produced almost *ad libitum*. So far as the action of disinfectants is concerned it might almost be classed with ordinary contagion, with which it agrees more than it differs. The experiments with vaccine were conducted as follows:—Four capillary tubes were charged with lymph from one vaccinifer; the contents of two of the tubes were diluted by an equal volume of a solution composed of 1 part of salt dissolved in 200 parts of water; the lymph contained in the other two was mixed with an equal volume of disinfectant solution of ascertained strength. The tubes were properly secured, and the contents were afterwards used in vaccinating a healthy infant. The disinfected lymph was introduced into the right arm in three places, whilst the diluted lymph was used in the same way with the other arm. The inoculation was performed by scratching and not by puncture, and the results were observed and noted upon the eighth day.

Three sets of experiments were made with liquid vaccine—carbolic acid, chlorine, and sulphurous acid being the disinfectants used (experiments with sulphurous acid proved a failure, the mixture of acid and lymph having gelatinised). The following are the results:—

“ Action of Potassic Permanganate on Liquid Vaccine.

| No. | Proportion of Permanganate in the Material inoculated | Number of Vesicles on Arm inoculated with diluted Vaccine | Number of Vesicles on Arm inoculated with disinfected Vaccine | Remarks |
|-----|---|---|---|---|
| 1 | .025 per cent. | 2 | 0 | } Vesicles of the same size on both arms. |
| 2 | .025 " | 2 | 2 | |
| 3 | .05 " | 3 | 3 | |
| 4 | .1 " | 3 | 3 | |
| 5 | .5 " | 3 | 0 | |
| 6 | .5 " | 1 | 0 | |
| 7 | .5 " | 2 | 0 | |

“These experiments point to a result which stands midway between the exaggerated value ascribed to the permanganate by some authors, and the total repudiation of its claims by others. (O’Nial, for instance, concludes that the permanganate is a useful deodorant, but has scarcely any germicide power.)

“It is evident that the proportion of permanganate required to destroy the infective energy of vaccine is relatively large; but that, in such excess, it is capable of doing the work.

"Action of Chlorine upon Liquid Vaccine."

| No. | Proportion of free Cl. introduced into the Material inoculated | Number of Vesicles on Arm inoculated with diluted Vaccine | Number of Vesicles on Arm inoculated with disinfected Vaccine | Remarks |
|-----|--|---|---|---|
| 1 | ·00185 per cent. | 3 | 3 | Lymph is alkaline ; contains no free Cl. |
| 2 | ·00369 " | 2 | 3 | |
| 3 | ·0204 " | 2 | 2 | |
| 4 | ·0408 " | 3 | 2 | |
| 5 | ·07105 " | 3 | 1 | |
| 6 | ·09413 " | 3 | 3 | |
| 7 | ·09413 " | 3 | 1 | |
| 8 | ·1421 " | 2 | 2 | |
| 9 | ·1633 " | 3 | 0 | Lymph distinctly acid. |

"The negative results furnished by the first eight inoculations were unexpected. The lymph, after admixture with the solution of chlorine, was found, in every case, to have retained its alkaline reaction and to contain no trace of free Cl. In the ninth experiment, however, in which the vaccine was satisfactorily deprived of its infective energy, it was found to be distinctly acid after the chlorine water had been added to it. It would appear then that chlorine, unless it be added in sufficient quantity to render the lymph acid, has no appreciable influence in restraining or abolishing its infective power.

"Action of Carbolic Acid on Liquid Vaccine."

| No. | Proportion of Carbolic Acid in Material inoculated | Number of Vesicles on Arm inoculated with diluted Vaccine | Number of Vesicles on Arm inoculated with disinfected Vaccine | Remarks |
|-----|--|---|---|---|
| 1 | ·25 per cent. | 3 | 3 | Vesicles very small. |
| 2 | ·5 " | 3 | 3 | |
| 3 | ·5 " | 3 | 3 | |
| 4 | 1 " | 2 | 0 | |
| 5 | 1 " | 3 | 1 | Vesicles large on arm inoculated with diluted lymph ; very small on arm inoculated with carbolised lymph. |
| 6 | 1 " | 3 | 3 | |
| 7 | 1·5 " | 2 | 0 | |
| 8 | 1·5 " | 3 | 0 | |
| 9 | 1·5 " | 3 | 3 | |
| 10 | 1·5 " | 3 | 2 | |
| 11 | 2 " | 3 | 0 | |
| 12 | 2 " | 2 | 0 | |
| 13 | 2 " | 3 | 0 | |

"It is sufficiently evident from these experiments that the presence of 1 per cent. or less of carbolic acid in vaccine exerts no influence upon its activity. When the proportion of acid present is between 1 and 2 per cent., the effects of inoculation are irregular. 2 per cent. seems enough to destroy its infective power with certainty."

Dr. Baxter next tried the effect of gaseous disinfectants upon dry vaccine. Ivory points charged with vaccine were placed in glass bottles, filled to the extent of one third their volume of saturated solution of chlorine or of sulphurous acid. After exposure for a given time they were removed, and three days later were used to vaccinate an infant, who was simultaneously inoculated with virgin vaccine. One experiment was made with the object of determining whether or not desiccation of vaccine over concentrated sulphuric acid would modify the infective power of the virus. The points there treated were found to be as active as ordinary vaccine.

The Tables show the results of the action of gases or vapours upon vaccine:—

“Action of Chlorine on Dry Vaccine.

| No. | Duration of Exposure | Number of Vesicles on Arm inoculated with Virgin Points | Number of Vesicles on Arm inoculated with disinfected Points | Remarks |
|-----|----------------------|---|--|--|
| 1 | 5 minutes | 3 | 1 | The vesicles produced by the virgin points were all large; those furnished by the disinfected points very small. |
| 2 | 10 " | 3 | 1 | |
| 3 | 15 " | 3 | 2 | |
| 4 | 30 " | 2 | 0 | |
| 5 | 30 " | 3 | 0 | |

“Action of Sulphur Dioxide on Dry Vaccine.

| No. | Duration of Exposure | Number of Vesicles on Arm inoculated with Virgin Points | Number of Vesicles on Arm inoculated with disinfected Points | Remarks |
|-----|----------------------|---|--|---------|
| 1 | 10 minutes | 3 | 0 | |
| 2 | 10 " | 3 | 0 | |
| 3 | 10 " | 2 | 0 | |
| 4 | 10 " | 3 | 0 | |

“Action of Vapour of Carbolic Acid on Dry Vaccine.

| No. | Duration of Exposure | Number of Vesicles on Arm inoculated with Virgin Points | Number of Vesicles on Arm inoculated with disinfected Points | Remarks |
|-----|----------------------|---|--|---|
| 1 | 5 minutes | 3 | 1 | No constant difference observed between vesicles furnished by carbolised and those furnished by virgin points." |
| 2 | 10 " | 3 | 3 | |
| 3 | 15 " | 3 | 1 | |
| 4 | 20 " | 3 | 3 | |
| 5 | 30 " | 3 | 2 | |
| 6 | 30 " | 2 | 0 | |
| 7 | 60 " | 3 | 0 | |
| 8 | 60 " | 3 | 0 | |

Dr. Baxter states that the only experiments relating to the disinfection, actual or attempted, of vaccine of which he could find any record are those of Dr. Henry (1831), Mecklenburgh (1869), and Dr. John Dougall (1872 and 1873). He says:—

“None of these observers appear to have investigated the action of destructive agents upon the dried virus, and some of their results are open to question; but the exceeding dearth of facts will not allow of any experimental data being neglected.

“Mecklenburgh,^a in a preliminary notice, makes the following assertions, without, however, giving any details as to the number of experiments performed or the methods employed:—1°. That the exposure of vaccine lymph, diluted with its own volume of glycerine, to the action of chlorine (under a bell-jar) for several hours, fails to impair its efficacy, as tested by subsequent inoculation. 2°. That pure lymph mixed with an equal volume of the *aqua oxymuriatica*^b of the Prussian Pharmacopœia, yields normal vesicles when inoculated. 3°. That lymph similarly treated with impure acetic acid was found to have lost its infective power. 4°. That out of eight children inoculated with lymph which had been mixed with commercial carbolic acid (proportions not given), only three took. The mixture is stated to have reddened blue litmus (?). The promise made by the author to publish an extended series of similar experiments does not, so far as I can ascertain, appear to have been redeemed.

“Dr. John Dougall, in the course of a very interesting experimental inquiry, published in the *Glasgow Medical Journal* for November, 1872, and February, 1873, performed eleven inoculations with vaccine which had been exposed to the action of certain volatile media. The method is thus described:—‘To the separate vapours (contained in bell-jars of a cubic foot capacity) separate minims of vaccine lymph were exposed for twenty-four hours. The dry spot remaining was moistened with glycerine and water, its reaction taken, and the mixture sealed in capillary tubes till an opportunity occurred for vaccinating a child with it. All the mixture was used in one insertion, so as to make sure of obtaining its full effect. The lymph in every instance was at first alkaline, and the glycerine neutral.’ Inoculation yielded characteristic vesicles when performed with lymph which had been exposed to the action of the following vapours—carbolic acid, camphor, chloroform, sulphuric ether, and iodine. On the other hand, the virus acted upon by chlorine, sulphur dioxide, nitrous acid, glacial acetic acid, and hydrochloric acid, proved absolutely barren.”

^a Berlin. Klin. Wochenschrift. 21 June, 1869.

^b This is a solution of chlorine, containing about $\frac{1}{4}$ per cent. of the gas.

It is strange that our experiments on the action of chlorine and sulphurous acid upon dried vaccine, made in 1872, should have escaped the notice of Dr. Baxter, who appears to have made a special search for investigations of the kind. In the number of this Journal for June, 1872, there is to be found a paper on "The Application of Gases as a Means of Destroying Contagion." It was read at a meeting of the Medical Society of the King and Queen's College of Physicians, held in May, 1872, and abstracts of the paper appeared in most of the medical journals for that month. That portion of it which refers to the action of disinfectants on dried vaccine is mentioned in Dr. Dougall's paper, quoted by Dr. Baxter. Finally, the greater part of the paper is given in Cameron's "Manual of Hygiene,"* page 325. In this paper we showed that gaseous disinfectants did not, unless when used in enormous quantities, destroy the efficacy of vaccine, nor did they prevent the appearance of bacteria in animal fluids. The practical deduction from the experiments was the inutility of the ordinary method of using gases as a means of destroying contagion.

Dr. Baxter made some experiments to ascertain the effect of heat upon vaccine. He found that its infective power did not resist a temperature of from 185° to 195° F., when exposure lasted for half an hour.

Dr. Henry found that vaccine did not resist the temperature of from 120° to 140°; but Dr. Baxter accounts for the discrepancy between his results and those of Henry's by the fact that a prolonged low temperature produces the same effect as a higher one of shorter duration. In Henry's experiments the lymph was heated during four hours.

The virus of infective inflammation used by Dr. Baxter was derived from the peritoneal cavity of Guinea pigs which had died of infective peritonitis. The disease was sometimes primary, and in such case it was incited by the introduction of putrid pus from dogs which had died of artificial septicæmia, or from peritoneal exudation from other Guinea pigs. When the disease was secondary it arose from subcutaneous inoculation of infective matter derived from other Guinea pigs. The virus was generally pale, viscid, and occasionally watery and sanguinolent. It contained 5·0118 per cent. of solid matter, including 0·793 per cent. of mineral matter.

Dr. Baxter found that the addition of 1 per cent. of carbolic acid, 0·078 per cent. of chlorine, 2·9 per cent. of sulphurous acid, or 0·05

* London : Baillière, Tindall, and Cox. 1874.

per cent. of permanganate of potassium to the infective fluid, destroyed its contagious properties. The small quantity of permanganate which was required to destroy the infective power of this virus is quite remarkable, the general belief being that this salt does not exercise a powerful action upon disease germs, though its utility as a deodorant is unquestioned. Dr. Baxter found that 2 per cent. of carbolic acid, and 0.4 per cent. of sulphurous acid, destroyed the infective power of the virus of glanders, which, however, was quite unaffected by the addition of 0.5 per cent. of carbolic acid. Dr. Baxter's elaborate paper contains a large amount of valuable information, and it will be read with great interest by all who are engaged in the study of the pathology of contagious diseases.

NITRITE OF AMYL IN CHOREA AND IN INTERMITTENT FEVER.

DR. ZEIGLER has employed inhalations of this drug in a few (six) cases of chorea; and the results he has obtained are sufficiently satisfactory to elicit a further trial for the mode of treatment. The three patients, notes of whose cases are given, were school-girls, aged respectively thirteen, seven, and fourteen years. They were kept in bed for at least the first four or five days, and given inhalations of three to six drops of the amyl three times daily. Case III. (aged fourteen) got ten drops. In Cases I. and II. the choreic convulsions were arrested by the end of the second week, no amyl being given from that time. In Case III. they entirely disappeared at the end of the twelfth day. In the same number of this journal Dr. Osgood speaks of the value of the nitrite of amyl in intermittent fever in aborting the chill, and gives three instances in which it thus proved effectual. It has no especial effect upon the later stages except more or less to shorten them. Dr. Zeigler, in the paper already alluded to, also reports having used the amyl in a case of intermittent fever just as the cold stage had fairly set in. The chill, which at other times would last about half an hour, was instantaneously arrested, and followed by a very mild stage of fever and perspiration. Dr. Zeigler does not state the dose of the nitrite he used. Dr. Osgood ordinarily employed about six drops. In one of his cases the chill was more obstinate, or the remedy less effectual, for although the chill momentarily and at once aborted, it returned several times, each recurring chill, however, being feebler than the preceding one before Dr. Osgood fairly conquered it, which he did by large doses (gtt. xx-xxx). Dr. Osgood says that may be a heavy dose of the amyl (say f3j) given at the outset would abort a chill at once, and finally. At any rate, the more he sees of the effects of this remedy the less he fears it in large doses.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

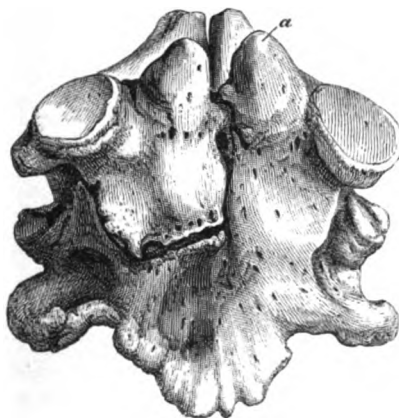
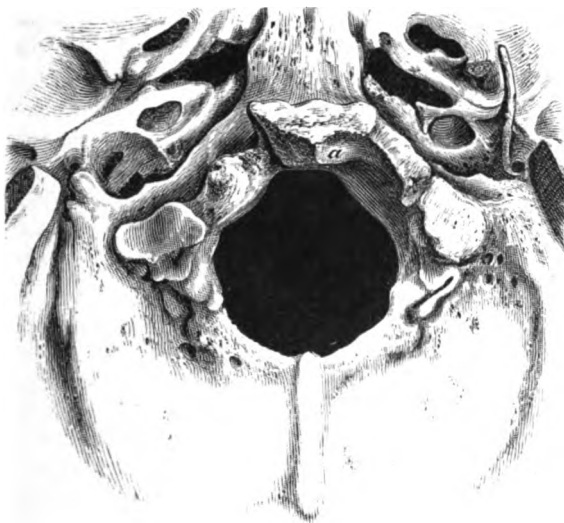
PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—HENRY KENNEDY, M.B., F.K.Q.C.P.

Secretary—E. H. BENNETT, M.D.

Rickety Deformity of the Skull and Upper Cervical Vertebrae.—DR. E. H. BENNETT exhibited the specimens represented in the accompanying woodcuts. A skull with portions of the first vertebra united by bone to the margins of the occipital foramen, and the second, third, and fourth cervical vertebrae of the same skeleton ankylosed, with the exception of one half of the atlas, which vertebra presented remarkable deformity. He said:—In presenting these specimens to the Society, it is necessary to give some account of their antecedents, and especially to prove their relationship to each other. As happens with the greater number of specimens of this kind, a life-history is entirely wanting, and even the description of the recent dissection, for their exceptional characters are mostly discovered only after the bones have been macerated, and after they have been separated from their fellows. Such is the history of these two specimens, and, with one important exception, of a long series of similarly affected bones, which I propose exhibiting on another day to the Society. My object in presenting this series of specimens is to trace the deformity common to them all, from the most erratic (those represented in the accompanying cuts) down to a simple and characteristic specimen, of which the nature and history is known with certainty. First, as to the history of the vertebrae and skull before the Society. The three ankylosed vertebrae were for several years in the possession of the late Professor Smith, and were purchased, as part of his collection, by Trinity College. The skull lay in the Anatomical Museum of Trinity College, having been put apart from several others, in consequence of its exceptional characters, at the end of an anatomical session. The dissecting-room porter identifies the vertebrae as having been obtained by him and given to Professor Smith, and also the skull,

which he placed in the Museum. But more satisfactory and more complete evidence is obtained from the examination of the specimens, when fitted to each other. They correspond strictly, and at the points marked in the cuts (a) they present exactly corresponding enamelled surfaces, where the action of chronic rheumatic arthritis has produced its familiar porcelain-like polish; with such evidence, I cannot doubt, although we have lost portions of the first vertebra, that the specimens are from the same body. I enter into these details, as I consider them essential, before attempting the explanation of the deformity which the specimens present—an explanation not readily given, for I know that the ankylosed vertebræ were long a puzzle to the late Professor Smith, no mean authority in the solution of bone puzzles, and I know that he never obtained the solution. In all probability I should not have been able to obtain it either, as I believe I have done, but for the finding of the skull and the examination of the series of specimens which I shall by-and-by lay before the Society. The three vertebræ have all the articulations proper to themselves obliterated by bony ankylosis, except those belonging to the right half of the axis. The articulations which connected the fourth to the fifth cervical are free; those of the oblique processes slightly marked by rheumatic disease, and the free border of the body of the fourth is crenated remarkably—a point of some importance, as this appearance is to some extent characteristic. The laminæ are united by bone, except on the right side of the first pair. The parts of these bones so fused, do not present on their surfaces the characters so easily recognisable in cases of ankylosis, resulting from caries or from chronic rheumatic arthritis affecting the vertebræ. I may, therefore, without hesitation, reject both these diseases, in accounting for the ankylosis. The most striking features of this specimen are the double or bifid odontoid process, and the vertical division of the body and arch of the axis. The fissures dividing the middle line of this bone are evidently excessive developments of the intervals which normally exist between the ossific centres of the odontoid process, and, posteriorly, of the laminæ. The anterior fissure appears to have extended downwards, so as to divide the centre of the body of the axis in the middle. The right half of the axis, with half the odontoid process, are completely free of the ankylosis, which involves the remainder of the vertebræ and the two succeeding bones. Some motion must have existed between these parts, for the joint between the articular process on the right side is normal. The only remaining point which requires notice is the unsymmetrical projection forwards of the superior articular processes of the axis, and the strongly developed ridge beneath each at the positions of attachment of the articular capsule. Turning to the skull (the parts of chief interest, those around the occipital foramen, are represented in accompanying woodcut), we find that a large part of the front of the atlas is united to the margin of the occipital foramen, and that it presents



facets which correspond to the bifid odontoid process, that on the left side being complete and marked by the rheumatic eburnations above referred to. The condyles of the occipital bone are very imperfectly developed, and are continued forwards into the irregular mass of bone representing the front of the atlas. The cartilaginous surface on the left side is reduced to one half its normal length, on the right it is even more reduced in length, so that its transverse measurement exceeds the antero-posterior. The surfaces of the base of the skull, between the mastoid processes and the ill-formed occipital condyles on each side, are abnormal in shape and unsymmetrical; on the right side the transverse measurement is greater than on the left, and the surface of bone outside it slopes from the margin of the condyle downwards and outwards almost without interruption into the mastoid. A wide jugular fossa and opening exists on this side, and the styloid process is absent. On the opposite side, at first view, the corresponding parts look normal; they are, however, when examined in detail evidently compressed. There is no jugular fossa, or next to none; a minute opening for the jugular vein, and a well-formed styloid process exist; the base of the styloid and the stylo-mastoid foramen are nearer the middle line than the corresponding points on the opposite side. The surface of the basilar process, immediately in front of the ankylosed portions of the first vertebra, is excavated, and the process is irregular in shape. These points and the general features of the skull, remote from the region of the occipital foramen, its general want of symmetry, the characters of the bones of the face, and of the sutures, prove that it is affected by disease, in all respects similar to that which has produced the alterations of the series, which I hope to present at our next meeting. The further tracing of this subject, so far as I am able to accomplish it, will, I think, establish that the deformities of the skull and vertebræ, which this and the other specimens establish, are one and all the result of rickets.—*February 5, 1876.*

Rickety Deformity of the base of the Skull and of the upper Cervical Vertebra.—**DR. E. H. BENNETT** exhibited a series of skulls and cervical vertebræ, and also an entire skeleton, in completion of the communication made by him on February 5th. He also exhibited the Plates XIV. and XV. of Sandifort's Museum Anatomicum. He said:—The four skulls and the two separate occipital bones on the table exhibit characters similar to the instances figured in these plates of Sandifort's Museum, and similar to the specimen which I presented to the Society at its last meeting. The similarity of these cases is such that no one can hesitate to place them in a single group as illustrations of the same disease; while they are thus similar, each presents individual characters. The first skull repeats the characters of Fig. 2 of Sandifort's plate—viz., the first vertebra, while ankylosed to occipital bone in front

and at the joints, has been buried in the base of the skull, the occipital having yielded under the weight of the head and bulged into the cranium, taking with it, of course, the vertebra. The skull in the cerebellar fossæ is reduced to the thinness of paper, and the entire base, vertex, and face, bear the characters long ago described as rickety. The two next specimens resemble very closely Figs. 1 and 3 of the same plate. The first vertebra is large and fairly developed, except the right half of its posterior arch, but is intimately united by bone to the occipital condyles and to the bone in front of them; both specimens have the anterior arch, in part, buried in the base of the basilar process; the upper surface of the left transverse process is in contact with the jugular eminence on the left side of one specimen. These two differ from Sandifort's plate in having the right half of the posterior arch defective, unconnected with its fellow behind, and in a great measure fused with the margin of the occipital foramen. In one of these the articular facet, for the odontoid process, is formed by the occipital bone as well as by the first vertebra. The remainder of these skulls are fairly formed, but still show signs of rickety change. It is to be noted that Sandifort, while he describes the specimens represented minutely, does not attempt any explanation of the deformities, and does not anywhere suggest that they are produced by rickets. I am not acquainted with any description of these deformities as of rickety origin, except that contained in the account of one of the specimens in the Musée Dupuytren, by Lacroix, which, in its essential characters, is referable to the same category as these which I have submitted. The following is the label of this specimen:—"No. 614, ankylose de l'articulation occipito-atloïdienne symptomatique d'une affection rachitique." To remove any doubt of the rickety origin of these deformities of the skull and first vertebra, and of the remaining specimens of ankylosed and defective cervical vertebræ on the table, I beg to submit this skeleton of a rickety dwarf which has been recently added to our museum. The entire skeleton is but three feet seven inches in height, and presents many points of interest which might delay us if we had time to examine them; but as they are all well-known features of the disease I may pass directly to the point I seek to establish. The base of this skull, like the rest of the skeleton, is deformed, shortened, and compressed. The first vertebra has its upper surface entirely united to the skull, and while all its parts are dwarfed, its posterior arch exists only as a fine ridge around the foramen magnum; here the same form of ankylosis exists as in the other specimens. The entire of the first vertebra, with the adjoining part of the skull, bulges into the cranial cavity, so that the jugular eminences of the occipital are on each side on a level with the under-surface of the vertebra. A glance at this specimen establishes the rickety character of the deformity in all these instances. The next step in the examination of this series is to turn to

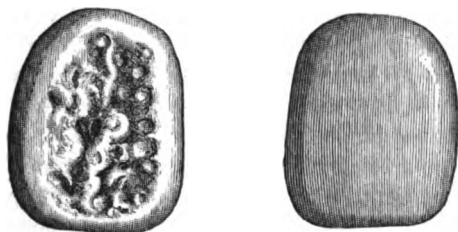
this group of ankylosed vertebræ. I have here six specimens of ankylosis of the axis, with the third cervical vertebra; five of these, including those belonging to the skeleton of the dwarf, belong to the Museum of Trinity College; one to that of the late Professor Smith. I have already described a similar ankylosis affecting the second, third, and fourth cervical; and in one of these specimens the fourth and fifth cervicals are united to each other. In all these there is, as in the cranial specimens, much variety, but all present the common characters of crookedness and malposition of the articular facets, and generally the strongly marked ridges, already noticed, marking the attachments of the articular capsules; in several, too, the crenated margins of the bodies also previously noticed. No single one of these five exhibits rheumatic characters or traces of caries, and one of them is evidently derived from the body of a child. This specimen has the advantage of leading us naturally to the next group of specimens; with it the first vertebra has been preserved, and in it the same form of defect exists as the next series presents throughout—viz., some defects in development of the posterior arch and of the bone, with irregularity of its articular surfaces and processes. I may now exhibit this long series of abnormal first cervical vertebræ—abnormal chiefly by defect of development of parts of the posterior arch, such as I have already presented in the cases of ankylosis of occipito-atlantal joints, and in the last group. Many of these show traces, particularly at the insertions of ligaments of the same affection, as the other specimens. I have no doubt that many of them—I will not say all—are instances of arrest of growth, the result of rickets. We have long been in the habit of calling these congenital defects of the first vertebra, but I think I have shown evidence sufficient to prove that to the great majority of them this description does not apply. It must not be supposed that these changes are constant in rickets; on the contrary, they are often absent, at least the ankylosis and the defects of ossification; but this remark applies to almost every anatomical character of rickets.—*February 12, 1876.*

Tapeworm.—DR. HENRY KENNEDY, President, said: I shall only occupy the attention of the Society for a few minutes, while I exhibit a specimen which came into my possession this morning, and one or two points connected with which are worthy of record. It is a specimen of a tapeworm of very small size, but still exceedingly interesting. Whether it is a full-grown animal or not I cannot take on me to say, but that question arises, because it was passed by an infant of only five months old. Within my experience I have never known tapeworm to occur at so early a period of life. A remarkable circumstance connected with the case is that the child was spoon-fed. Whether the milk of Dublin had anything to say to it or not I cannot tell, but, at all events,

the child was regularly fed by the bottle. The child was perfectly healthy; the only symptom of disorder that I could elicit, after questioning the mother, having been that the child suffered constantly from dysuria. Every time it made its water there were distinct symptoms of pain in connexion with it. It is certain that dysuria is frequently a symptom of the presence of this worm. A remarkable fact in the case is, that the worm came away without the mother having given the child any medicine. Dr. Wyse, of Cavendish-row, requested me to see the child, which I did, and he gave me the worm to show to the Society. The first point of interest in the case is the age at which the worm occurred; the next, the fact that it came away without medicine; and the third, that the only symptom it seems to have produced was the dysuria. In this city the occurrence of tapeworm has been, on the whole, rare.—*February 12, 1876.*

Loose Cartilage removed from the Knee-joint.—DR. BARTON said: The specimen which I beg to lay before the Society is a cartilage which I removed from a knee-joint. It is not often that we have an opportunity of examining such specimens, inasmuch as they are but seldom altogether removed. The patient was a young man, twenty-two years of age. About five years ago he suffered from symptoms of an acute inflammatory kind in the right knee-joint, which seems to have been synovitis, and was confined to bed by it for six weeks, during which time he was unable to lay his foot on the ground. He recovered from this, and went to the country. He was at that time a footman in a gentleman's family, but on going to the country he engaged in the occupation of a blacksmith. He went on extremely well, and without any pain in the joint, for nearly five years, until about five weeks ago, when, as he was going downstairs, with a bucketful of water in his hand, he felt something give way in his knee, which suddenly became stiff and painful. He sat down on the stairs, and then felt, as he expressed it, "a kernel slip out between the bones." He felt this distinctly in the inside of his knee, but, on examining it with his hand, it slipped away, and got up under the tendon of the quadriceps extensor, and then appeared on the other side. When he came to hospital it could be distinctly felt on the outside of the knee-joint, at the edge of the extensor. When pressed there it slipped down to the outside of the joint, and then got away from the hand in between the bones, and under the patella. These things are usually only the size of a pippin in the inside of an orange, but this body felt tolerably large. It could be readily fixed in the outer corner of the joint, under the external lateral ligament, and I proceeded to isolate it there, and remove it by Syme's subcutaneous method, which is known to be by far the best way of proceeding, although in some cases there are difficulties in carrying it out. A narrow tenotomy knife was used, which

was carried obliquely downwards and inwards, so as to divide the synovial membrane, and enable the body to be pressed out. It seemed to have left the joint, being lodged at least half an inch from where it was before the operation. I fixed it by straps in its new position, and applied a blister over it. It remained in this position for three or four days, the patient being in bed. As soon as the slightest motion was allowed it escaped from its position, and became free again in the joint. I repeated this proceeding on three different occasions, always with the same negative result. The body failed to become fixed in the abnormal position in which it was placed. Probably it never got out thoroughly from the synovial membrane, its shape and size hindering its movement. Under these circumstances, I determined to adopt the more hazardous, but thorough, proceeding of removing it entire from the joint, trusting to the antiseptic method of dressing to prevent inflammation. Accordingly, I cut down on it, and removed it from the joint, under the antiseptic plan of dressing, and the man recovered without a single bad symptom. The cartilage is now shrivelled up, having been allowed to dry, but what I exhibit is quite sufficient to



show what its original size and shape was. This side, which is now concave, was, when fresh, somewhat convex, and presented a perfectly smooth surface. The other side was puckered. An examination with the microscope, which Professor Bennett was kind enough to make, revealed distinct cartilaginous cells, with, in places, degeneration, the result of earthy deposit. It would appear that the puckered side was the attached side, and that the other was the free side; that it was attached probably at the edge of the cartilage of the femur, where it is reflected over the condyles. The sequence of events was, it seems probable, that the inflammation which had occurred five years previously ended in the development of an outgrowth from the edge of the normal cartilage. From the time when the inflammation ceased it became a permanent outgrowth of cartilage, which gradually increased in size until it attained the size of this loose piece. Then, by the motion of the knee-joint, it became shaken in its attachment, and finally became pediculated, and finally, when the man was descending the stairs with a heavy weight,

the pedicle gave way, and the cartilaginous mass became loose. Such appears to me to have been the history of the growth.—*February 12, 1876.*

Oblique Fracture of the Upper Third of the Thigh Bone.—**DR. WARREN** said: By the kind permission of Mr. Colles I am enabled to submit to the Society a most interesting specimen of oblique fracture engaging the upper third of the femur. The clinical history of the case is briefly as follows:—Joseph Carrin, age twenty-three, of slight build, whilst working on the top of a vat in St. James'-gate Brewery, missed his footing, and was precipitated to the ground, a distance of about 30 feet. He was immediately conveyed to Dr. Steevens' Hospital, and placed under the care of Mr. Colles. On examination the left thigh was found to be much swollen, the limb was shortened about an inch, and all the evidences of fracture engaging the upper third of the bone were well marked—viz., crepitus, altered mobility, and angular deformity outwards, with inability to move the limb. The skin was uninjured, and there were no evidences of any other injuries. The shortening was easily removed by simple extension. The fracture was first treated by the "*extension method*" by means of weights, but on the third day subsequent to the patient's admission to hospital, for this treatment Liston's long splint was substituted, as, owing to an attack of delirium tremens, the limb could not be maintained in a fixed position by the weights. The delirium tremens was subdued in the usual way by opiates and chloral hydrate, and the patient progressed very favourably until the ninth day, when he had a well-marked rigor, with sudden elevation of temperature, accompanied by slight cough and dulness on percussion posteriorly over the lower lobe of the right lung; high febrile movement with dyspnoea followed. On the morning of the twelfth day the patient became quite unconscious, and a slight icteric tint of the skin was observed; he sank through the day, and died towards evening, December 20th, 1875, twelve days from the receipt of the injury.

Autopsy, eight hours subsequent to death.—Surface of body slightly icteric; upper part of chest covered with a vesicular eruption; body warm; rigor mortis well marked; the left lower limb was shortened to the extent of about one inch; foot everted; there was angular deformity outwards in the upper part of the thigh; crepitus could be easily elicited; the deformity was readily replaced by extension. On making an incision down to the broken bone large quantities of dark sanious pus exuded, in which the broken fragments were bathed, there being no union whatever. The muscles in the vicinity were soft, dark in colour, and infiltrated with sanious pus. On opening the thorax the inferior lobe of the right lung was found to be in a state of hypostatic pneumonia; the pleural cavity contained a small quantity of clear serum. There was

extreme rigor mortis of the left ventricle of the heart, its cavity being almost completely obliterated and its walls immensely thickened.

On examining the specimen you observe, sir, a fracture commencing in front of the anterior inter-trochanteric region, at the junction of the neck with the shaft of the bone, which passes downwards and outwards in an oblique direction, terminating about five inches below the great trochanter, on the outer aspect of the femur, in an angular, sharp-pointed extremity, opening up and traversing for some inches the medullary canal, and lacerating extensively the medullary substance, which was in a state of inflammation for some distance above and below the fracture. The fracture completely detaches the head, neck, both trochanters, and about five inches of the upper extremity of the shaft of the femur from the remainder of the bone. The case is not only interesting on account of the fracture, but also on account of the supervention of pneumonic inflammation, as fatty embolism of the pulmonary vessels has lately attracted the attention of the German pathologists as a cause of death in recent fractures, especially when engaging the medullary substance of the bone.

In an article on the "Clinical Importance of Fatty Embolism," in *The London Medical Record* of December 15th, 1875, by Professor Czerny, of Friburgh, he describes a case of this condition supervening upon a simple oblique fracture of the upper third of the femur lacerating (as in the above case) the medullary substance, and producing osteo-mylitis.—*February 19, 1876.*

Uterine Mole.—DR. ARTHILL said: This is a specimen of the form of abnormal development of the ovum known as a "true mole." The Society are aware that two varieties of uterine moles are described by writers—one the product of conception, which is the true mole, and the other a substance produced by some cause other than conception. It is of great importance to be able to distinguish these, because if a false mole were pronounced to be the product of conception, very unjust suspicions might be entertained, or accusations possibly be brought against females. The present case is remarkable on account of the great length of time during which this body was retained in the uterus. At least nine months must have elapsed between the death of the embryo and the expulsion of the ovum. The patient was a young woman, aged about twenty-six. She had given birth to two children, the last of whom was born nearly two years ago. She menstruated normally for the last time on the 27th of March, 1875, nearly eleven months ago. After that all the usual symptoms of pregnancy were present, including those of the mamma and reflex irritation of the stomach. In the third month of her pregnancy she was kicked accidentally in the abdomen by one of her little children. Immediately after this there was a discharge of blood,

per vaginam, which continued, without any cessation, for three weeks, and then entirely ceased. From that time up to the present no discharge of any kind took place per vaginam, her general health continuing to be, on the whole, good. The total cessation of menstruation, however, without any of the ordinary symptoms of advancing pregnancy, made her anxious about herself, and consequently she came under my care. On examination I found the uterus to be considerably enlarged, and very much retroflected; and we came to the conclusion that there was something in the uterus, and that this probably was "a mole." The examination to which she was subjected had the effect of inducing uterine action; and in the course of twelve hours she expelled this substance which I hold in my hand. You see it is a firm fleshy mass, with central cavity plainly distinguishable. But there is nothing in the cavity. The Society are aware that if an embryo ceases to exist it may be absorbed in the course of a comparatively short space of time—sometimes within three days. But the ovum, nevertheless, may continue to live. Scanzoni is of opinion that masses like these are mainly composed of coagulated blood. Probably this dark portion may have been the original site of the rudimentary placenta. But the greater part of this mass is composed of blood deprived of its colouring matter. The true mole, of which this is a specimen, grows sometimes to a very large size, the nutrition of the ovum proceeding after the expulsion of the embryo.—*February 19, 1876.*

Tapeworm.—DR. H. KENNEDY said: I wish to put on record another instance of the disease which I exhibited here this day fortnight. That was a case of a tapeworm passed by an infant five and a half months old. It was a very unusual age for such a thing to occur. At the time our zealous Secretary remarked that the kind of worm I exhibited might have been passed by a dog. I made very particular inquiries since, and ascertained that the child not only passed the worm then, but had passed worms on previous occasions. The specimen I have now to show is nothing but a common tapeworm, and it occurred under the following circumstances:—Three weeks ago a man came to my house suffering from dyspepsia, for which I prescribed, and he got well. On the last day that I saw him he said he thought he was affected with worms. I inquired for some of the symptoms from him, but could make out exceedingly little. He said he thought he saw something coming from him like worms. On a minute examination I found that he had been subject to symptoms which I think worthy of being put on record, for these animals produce a great variety of symptoms which we should always be prepared for. I take it that this man had had these animals within him, and had been a sufferer from them for years. He stated that he was subject at times to an extraordinary sudden swelling of the

abdomen, without any apparent cause or reason. He used to be very much distressed by these symptoms while they lasted, but they rapidly passed off again on his taking a little medicine. That was one symptom. The other was simply a cough of a very peculiar character, which he never got rid of. It was perfectly dry, and he himself called it a stomach cough. It was nothing but a dry racking cough, and he had had it for very many years. When he mentioned the fact it brought to my mind the history of a case given by the late Dr. Graves, in which a female suffered from a cough of the same character, which defied the whole faculty. The lady saw a number of the leading men of the city, but was finally cured by an old woman, who prescribed for her a dose of turpentine. From the moment the turpentine was taken the cough disappeared, and at the same time a tapeworm was passed by the patient. I prescribed kousso in this particular case, and although it is unusual here to state anything as to treatment, I may be allowed to mention that if the kousso be infused in hot water, it not only adds very much to its efficacy as a medicine, but renders it easier to be taken by the patient. The quantity given to this man was a couple of drachms infused in a cup of warm water, which he got on Thursday morning at six o'clock; and at nine o'clock he passed a yard of tapeworm. An hour afterwards this whole mass was expelled, which I believe is between seven and eight yards long. The man was apparently in the vigour of health. Another remarkable point connected with the case is, that his wife, who brought me this specimen to-day, told me that she thought she also was afflicted with the same disease. On inquiring into the probable cause of it the only fact that presented itself in the way of explanation was, that they had both been in the habit of eating bacon, but I am afraid that the use of that food is too general to make it account for the occurrence of tapeworm in this particular instance. Tapeworm is comparatively rare in this country—much rarer than in England. During many years I do not think I have seen more than five or six cases of it.—*February 26, 1876.*

Fibrinous Uterine Polypus.—DR. M'CLINTOCK exhibited a specimen of fibrinous polypus of the uterus. He said: There is a form of tumour found in connexion with the uterus which, from its internal structure partly consisting of hard condensed laminæ and blood fibrine, and, from its pediculated shape, has received the name of fibrinous polypus. Examples of this kind of tumour have been described by Scanzoni, Ogle of London, myself, and several others. With respect to the nature of these polypi there has prevailed, and still prevails, a good deal of difference of opinion. Kiwisch, who is justly regarded as a high authority on uterine pathology, thinks that a growth having this structure may primarily originate and grow from the uterus. Scanzoni,

on the contrary, an equally eminent authority, has strongly expressed the opinion—in which I myself entirely concur—that polypi having this structure always originate in connexion with pregnancy, and are in reality some form of degenerated ovum, and are, therefore, very nearly akin in structure and nature to what have got the name among the older writers of *moles*.

This preparation, which I now submit to the Society, only came into my possession about an hour ago, through the kindness of Dr. Wyse, of Cavendish-row, under whose care the patient was, and who gave me the following history of the case:—The lady has had six children, and conceived last summer; but from the outset her pregnancy was attended with unusually severe symptoms. She suffered from excessive sickness of the stomach, which nothing almost could restrain. She had a great deal of pelvic uneasiness; frequent irregular bloody discharges from vagina, and was in constant danger of miscarriage. About the middle of the fourth month pains came on, and extreme loss of blood, for which Dr. Wyse was called in. On examination, Dr. Wyse found in the vagina a large globular tumour, which he at once supposed to be a polypus or fibrous tumour, with a well-marked pedicle or neck, which ran within the neck of the uterus, where it was lost. He thought it appeared to have an attachment to the interior of the cervix. After some time, the pains continuing, there was expelled from the uterus what I think all will admit to be incontestible proof of pregnancy—viz., a very well-developed fœtus of three and a half months' development, and, I have no doubt, it was living up to the time of its birth. Shortly afterwards, by spontaneous effort of the uterus, and without any assistance on the part of the accoucheur, this large mass which I now exhibit, and which he had felt in the vagina, was spontaneously expelled. At the time of its expulsion, now six months ago, it weighed seven ounces, but its immersion in strong spirits of wine, since then, has greatly contracted it. The lady made a tolerably good recovery, so much so that in three or four months afterwards she was pregnant again. We can now examine this tumour. I think we must admit that it has all the characters of a fibrinous polypus. It seems composed of condensed coagula, deeper in colour at the centre, and getting paler as we approach the surface. It is solid, and its cut surface has no resemblance to a fibroid tumour; and notwithstanding that so much time has elapsed since its extrusion, I have no hesitation in coming to the conclusion that it is nothing more or less than condensed blood coagulum, with membrane and fibrine interspersed. But then came the difficulty—how did it get into the vagina? If it was merely some of the placenta or involucra of the fœtus, the vitality of the latter would necessarily have been destroyed, its growth could not have gone on, and we would then have had little or no vestige of it remaining. That it was connected with the contents of the gravid uterus there can

be no doubt, from the structure of the tumour, from its character and appearance, from its being associated with pregnancy, and from its having been discharged along with the products of conception. We can now only form a conjecture on that point, and my own idea is that the patient conceived twins, one of which was blighted at an early period, and partially extruded through the os uteri, and that blood was extravasated into its structure; and by continual accretions from the hæmorrhage, it eventually acquired this large size and bulk, and remained there until the contents of the uterus—that is, the other ovum—came to be expelled, when, of course, it was discharged also. Still the case, even with this doubt as to its real and essential nature, is a very interesting and important one. The external surface, which was in contact with the vagina and mucous membrane, has the appearance of fibrine, owing to the red particles having been absorbed. Curious to say, this lady, after two or three months, again became pregnant, and went on for three months with the same symptoms and discharges as before. Then she miscarried, and on that occasion all that came away was this mass, which is greatly reduced in size, but presents the appearance of a cast of the cavity of the uterus, but on an examination it contains a central cavity and membranes, but no trace whatever of a fœtus. The embryo had evidently been blighted at a very early period, and blood extravasated into the decidua, and the tumour so formed constitutes what commonly receives the name of a mole pregnancy.—*February 26, 1876.*

Parenchymatous Nephritis.—DR. J. W. MOORE said: On this day fortnight I had an opportunity of submitting to the Society a well-marked specimen of fatty degeneration of the kidneys occurring in an elderly man, and proving fatal by uræmia. On this occasion I have to present a specimen of parenchymatous nephritis. The disease dated from the middle of last December. The subject of it was a man aged twenty-four years, and it proved fatal, not from the supervention of uræmic symptoms, but from a persistent diarrhœa, which ran down the patient's strength, and from œdema of the lungs. The young man was a hardy mountaineer, a resident in the county Dublin. He was of temperate habits; a farmer by occupation. The commencement of December last was very cold, and the snow lay deep on the ground. He was exposed to all the severe weather, and towards the middle of the month he caught cold; he described the attack as a heavy cold, which was followed by severe pain in the right side. Some time afterwards he noticed that his legs were swelled, and that there was some puffiness about his face and eyes. He had no cough; he was admitted into the Meath Hospital on the 19th of January, suffering from intense pain in the right side; he complained of hearing a "ticking" from time to time

at the seat of pain; he had also cramps in the abdominal muscles. On one occasion the stomach was sick and he vomited, but these symptoms were the effect of a dose of medicine. On a physical examination of the chest marked dulness on percussion was discovered from the right nipple downwards, and this dulness extended, to some extent, below the level of the ribs. I could not satisfy myself as to the existence of any hepatic tumour. All over the right axillary area there was a loud friction sound—the *frémissement* being perceptible also on palpation—and the idea was that he was suffering from an attack of acute pleuritis. The practising pupil who had charge of the case, as the event proved, very correctly diagnosed a considerable enlargement of the liver. I confess that from the absence of any hepatic tumour I did not think the liver was so much enlarged as that gentleman did. Under treatment he got quite rid of the intense pain in the side within two or three days. A day or two after his admission we discovered a well-marked cardiac murmur—systolic in time—which was best heard within about an inch and a half of the left nipple, and a little below it. This cardiac murmur was looked upon as anæmic in character. He continued tolerably well up to the beginning of the first week in February, when he caught cold, owing to exposure while suffering from an attack of diarrhœa; his voice gradually grew imperfect, and in a few days evidences of a serious laryngeal and bronchial catarrh were plainly manifested; all over the lungs posteriorly there was partial dulness on percussion, and also well-marked subcrepitus; the diarrhœa persisted, and he failed rapidly. At four o'clock on the morning of the 20th of February the mode of respiration completely changed. It had been previously tolerably normal as to rhythm, but at that time it became irregular, and his breathing was stertorous. He died in perfect consciousness at five o'clock the next morning. Twelve hours after his death a *post mortem* examination was made. The body was still warm. *Rigor mortis* was badly marked. The right lung was adherent to the lower part of the pleura and to the upper surface of the diaphragm. It was removed with some difficulty. In many places it was exceedingly œdematous, and hardly anywhere did it crepitate freely. The œdema was sanguineous in the lower parts of the right and left lungs. The liver was found to be greatly enlarged. It weighed 4lbs. 11½ ounces, and its serous covering on the upper surface was thickened and adherent. In places the substance of the liver was torn in the attempt to remove it. Elsewhere, also, there was considerable peri-hepatitis. On section the organ presents the characters of the so-called “nutmeg” liver to a certain degree, and it was also in a state of advanced fatty degeneration. On subjecting a small portion of it to microscopic examination I was astonished at the amount of free oil which was present. The central portion of the acini was of a more than usually deep red colour. The

right kidney weighed $9\frac{1}{2}$ ounces, and the left $10\frac{1}{2}$ ounces. The capsules were non-adherent. The microscopic appearances were those of the second stage of parenchymatous nephritis—that is to say, the stage of exudation with commencing fatty degeneration. The microscope shows, no doubt, that extensive fatty degeneration exists, but the pale colour is not altogether due to the presence of fat. It is chiefly due to anæmia of the cortical substance, produced by pressure from the proliferation of the epithelial elements of the parenchyma. Under the microscope the increase of these epithelial elements is a most remarkable phenomenon. No doubt, the epithelium found in such abundance is in places commencing to undergo fatty degeneration, for the epithelial cells have the peculiar appearance of molecular fatty degeneration. The morbid processes do not seem to be quite as advanced in the left kidney as in the right. In connexion with the diarrhœa the mucous membrane of the colon was found to be very much thickened, with numerous hyperæmic patches throughout. The spleen is tolerably normal in size, and contrasts remarkably with that taken from the body of the man whose case I laid before the Society before, and which weighed only $1\frac{1}{2}$ ounces. As to the degeneration of the liver it is quite possible that the fatty change took place principally during his sojourn in the hospital. As I said, he was an exceedingly active man. In the hospital he hardly ever stirred from his bed, and he was well fed. It is, therefore, quite possible that the sudden cessation of exercise, the confinement to the house, and the good feeding, encouraged this extreme fatty degeneration. The valves of the heart are healthy, a fact which negatively proves the anæmic character of the murmur heard during life.—*February 26, 1876.*

Lipomatous Nævus.—DR. BARTON said: The specimen I have to lay before you is a tumour which I removed from a young woman last Wednesday. The clinical history of the case and its pathological characters are of interest. She was thirty years of age, and was admitted into the Adelaide Hospital on the 4th of this month. About five years ago she noticed a swelling in her right groin which gave no pain, but was occasionally a little inconvenient. It slowly enlarged. About two years ago she presented herself to me, and asked my advice on the subject. I examined the groin carefully and found a colourless tumour, about the size of a hen's egg, below Poupart's ligament, firmly fixed on its inner aspect, but having its outer side rather movable. I could not upon this occasion form a definite opinion as to the nature of the tumour, except in a negative way. I said that it was *not* a hernia, but I could not be sure what it was. I advised her to return to the country and let it progress. After a lapse of two years from that time she presented herself to me again. The tumour had in the meantime increased considerably in size, and as it was still growing she wished to have something done. On a

careful examination of it I found that it presented the same symptoms so far as its position and attachment went, but on handling it I found that its consistence in different parts was by no means uniform. Part of it had hard nodules something like the lobes of a fatty tumour, while at other places it had a soft and fluctuating feel. It was attached at its inner aspect, colourless and painless. The patient was in perfect health. She came into the hospital, and I determined, after consultation, to remove the tumour. On cutting down on it and laying it bare the appearances it presented were remarkable. It was of a deep purple colour, vascular, and could with difficulty be separated from the parts around. It was partially encapsuled. Tracing it from without, inwards towards the inner angle of Scarpa's triangle, I found it firmly attached in this region, so much so that it appeared to proceed out of the saphenic opening, round the edge of which it was firmly attached. A ligature was placed round the vessels which entered the tumour at this point, and then the mass was removed. One clinical character of this tumour deserving of notice, and which I omitted to mention before, was, that during the progress of the disease she noticed that on many occasions it increased rapidly in size and diminished again, so much so that at one time it was the size of her two hands put together, while at another time—at which I saw it—it was about the size of a large hen's egg. While the patient was on the table she was put under the influence of ether, and as one of my colleagues handled the tumour it diminished so much under his manipulation that he suggested that it was gone. However, it was not gone. It was there, although it had decidedly diminished in size under his handling. When removed it presented the appearance you see here. It is in its central part very vascular; and this vascular centre is what gave it the highly-congested, smooth appearance that we first saw when laying it bare. These harder masses are formed of lobulated fat contained in capsules, or rather moulded into capsules, which hold the fatty masses together. It is an interesting example of a fatty tumour, with many of the characteristics of *nævus superaddus*, which has been described by Virchow under the head of *Nævoid-lypoma*. This beautiful drawing, lent to me by Dr. Hughes, presents an example of a very similar tumour exhibited to the Society some years ago. It is remarkably like the present tumour in aspect, only that it had advanced further. It occurred in the thigh of a young woman, and before its removal gave rise to great hæmorrhage, so much so that she was excessively blanched and appeared in danger of dying before the operation. Dr. Hughes removed the tumour in Jervis-street Hospital. It presented so very dangerous and malignant an aspect that considerable apprehensions were entertained as to the success of the operation, but to the surprise of his colleagues and himself—the late Surgeon Adams being amongst those present—the whole thing turned out at once without any loss of blood, and proved to be a mass of fat. On

examination it was found to consist, like that on the table, of fatty masses enclosed in capsules, with, however, a considerable part of a vascular structure, and containing blood, from which, no doubt, the hæmorrhage occurred. From the aspect presented by these tumours we may account for the phenomena of dilatation and contraction which occur during life. It was like the gelatinous polypus of the nose, which, under changing atmospheric conditions, absorbs more or less moisture, and varies in size. The tumour in question, probably at a time when it was greatly distended, was full of blood; again it collapsed under pressure or manipulation. It probably varied in size, with the amount of vascular tension which was present. If not removed it would perhaps have gone on until it presented the appearance of the one represented in this drawing, and would have given rise to hæmorrhage. I believe, however, that there is nothing of a malignant or cancerous kind in it whatever. Professor Bennett, who kindly made a careful microscopic examination of the tumour, found it to consist of fat globules, connective tissue, and blood-vessels. The patient made a good recovery, although she had a smart attack of erysipelas round the wound.—*March 4, 1876.*

Case of Osteo-myelitis (Femur).—DR. T. E. LITTLE laid upon the table the left knee-joint, and the bones concerned in it (with a coloured drawing of the parts in the recent condition) of a young lad who had died a couple of weeks previously. He said: The subject of the lesions illustrated in the specimen now before the Society was a delicate-looking boy, aged fourteen, who had for some time been worked rather severely for a lad of his age. He was admitted to Sir Patrick Dun's Hospital on the 10th November, 1875, giving this history of his ailments:—Two days before admission a heavy shutter had fallen upon the great toe of his left foot, bruising it rather severely; he made, however, little complaint of the accident, and continued working. The next day he was sent a message a long distance, walking, heavily laden, and that evening the leg became tender and sore, and some fever supervened. On admission to hospital the injured toe was not swollen, but the nail was bruised and black; and along the dorsum of the foot, and inside of the calf of the leg, a superficial net-work of red lines leading upwards from the toe along these regions towards the knee indicated some amount of angeioleucitis; at the same time slight swelling of, and evidence of effusion into, the knee-joint itself existed. On the evening of that day fever ran very high; the temperature rose to 104°; the pulse to 114; and he had violent delirium for some hours. His last symptom yielded after the application of six leeches to the leg, which had become rapidly swollen and tender, and the administration of a draught of chloral and bromide of ammonium; and the boy slept well. Next day the fever was not so intense (temp., 102°; pulse, 108), and the delirium had subsided. The calf of

the leg was, however, more swollen and red; and in addition the knee-joint had become more swollen and tense, and was exquisitely painful and tender. He was put upon small doses of calomel and opium. On the third day after admission evidences of deep suppuration were made out in the swollen region of the calf of the leg; and an incision was made behind the tibia, which had to be carried not only through the aponeurosis of the leg, but even beneath the superficial layer of muscles before pus was reached. The formation of matter, in a diffuse manner, now rapidly followed along the course of the sheaths of, and dissecting up, the muscles of the calf of the leg, and of the lower part of the thigh; and at the same time it was evident that pus had formed in the knee-joint, which eventually evacuated itself into, and communicated with, the surrounding purulent depôt. Numerous openings now formed, or were made, at both sides of the joint, and over the lower region of the thigh. The constitution commenced to sympathise, and gave way under the profuse purulent discharge which became established at a very early period. In spite of every precaution, and though the patient was immediately placed upon a water-bed, bed-sores commenced to form so early as the fifteenth day, and rapidly sloughed deeply, increasing in number as the patient daily emaciated; uncontrollable diarrhoea supervened; and, in fact, all the phenomena of profound hectic became established with wonderful swiftness. A tendency to displacement backwards of the bones of the leg showed the destruction of the internal structures of the knee-joint. Of course, the question of operative proceeding, or of amputation, was discussed, but the complete absence of any evidences of limitation of the diseased action, and the profound character of the constitutional involvement, almost from the first, caused the idea of such interference to be rejected.

The patient died on the 21st February, 1876, about fifteen weeks after the original injury.

Autopsy.—On examining the limb after death a large purulent cavity was found almost surrounding the lower part of the thigh and upper part of the leg, communicating with the knee-joint behind the inner hamstring muscles, and dissecting up the muscles in these regions from one another. The knee-joint, with a considerable portion of the bones of the leg and thigh in its neighbourhood were removed, and lie upon the table.

On opening the knee-joint it was found to be full of pus, which communicated (as just mentioned) with the purulent depôt in the soft parts behind the insertion of the inner hamstring muscles—the pus apparently here taking the course naturally and anatomically marked out for it by the bursæ between the joint and the muscular tendons in this situation, and opened externally by free openings on both its superficial aspects. The bones entering into the formation of the joint can be observed to be almost wholly denuded of cartilage, which only remains in small patches

here and there upon their articular surfaces; the bone so bared was (when fresh) of a deep morone colour, but not in any degree carious, nor was its surface covered with granulations or lymph in any form. The synovial membrane has become in great part wholly absorbed, but wherever traces of it can be discovered as a distinct anatomical structure (as here in front of the lower part of the femur, or at the edges of the patella) it could be observed to be deeply and intensely injected; no lymph, however, existed upon its surface in any place. While the exterior ligaments of the joint are comparatively intact, the interior ligaments are entirely removed by absorption, if we except, perhaps, a small remnant of the posterior crucial ligament posteriorly; there does not exist a trace of either semilunar cartilage.

On proceeding to the examination of the bones, the tibia, fibula, and patella are observed to be healthy, except in so far as their articular surfaces share in the disease of the knee-joint. Over the front of the lower supra-condyloid portion of the femur, the periosteum was observed to be somewhat thickened, and stripped up from the bone with abnormal readiness; the bone beneath was of unnatural whiteness, except for a space of about two inches above the condyles, where it presented a deep pinkish hue, due obviously to some deep-seated internal vascularity appearing through the superficial layer of bone. Another pathological phenomenon worthy of note on the surface of this bone in this situation is the existence of these few irregular, sub-periosteal, osteophytic, stalactite-like outgrowths, so frequently met with as the results of irritation in the bones in the neighbourhood of diseased joints.

A vertical section of the bones of the thigh and leg, and of the knee-joint has been made, and displays a considerable amount of disease of the lower extremity of the femur. It shows, however, the epiphyses of both the tibia and femur, and the epiphysary lines, to be quite healthy, with the exception of probably some degree of congestion indicated by a deeper than natural colour of the cancellous bone tissue. The disease of the femur is confined to the medullary region and central region of the cancellous structure of the extremity of the diaphysis; there is no external communication or opening, nor (as already mentioned) does the disease transgress the limits of the epiphysary cartilage. The compact tissue appears to be healthy, with exception of the evidences of an irritative condition afforded by the osteophytes already alluded to upon its surface; it is not carious or necrosed in any place. The condition of the inferior two or two and a half inches of the diaphyses of the femur shows the results of intense internal inflammation of the cancellous extremity and lower part of the medullary cavity of the bone; the cancellous tissue is considerably absorbed, leaving an irregularly-shaped cavity, which was filled with dirty-coloured, puriform matter, mixed with discoloured greasy medulla of dark reddish brown tint, and lined with a layer of yellowish

lymph, patches and flakes of which can be still seen; when recent, this deposit presented in many places a brilliant yellow hue. In the lower part of this cavity a small sequestrum of the cancellous structure lies freely within it, embedded in lymph of the same curiously brilliant yellow colour. The margins of the thin layer of cancellous bony tissue which separates this abscess in the bone from the epiphysary line below, and of a thin layer of cancellous bone which separates it from the medullary cavity above, are intensely injected, being of a deep crimson-lake colour, evidencing the intensity of the inflammatory reaction at the limits of the diseased action in the femur.

The visceral organs—the lungs, heart, liver, spleen, and kidneys—were quite healthy. The last three of these organs were examined, more especially with a view to the possible existence of amyloid degeneration, but with an entirely negative result—not a trace of any of the characteristic staining with iodine taking place.

Remarks.—This case is one interesting clinically from the fact of its having been under observation from the very first onset of the disease to its fatal termination, and pathologically as suggesting a few important problems, to which I may be allowed to briefly refer. Firstly, as to its pathological nature, I think there can be little doubt that it offers one of the numerous and multiform aspects under which diffuse inflammation may present itself to us; the source and commencement of the subsequent lesions in a slight distal irritation; the evidences of extension by way of the lymphatics; the rapid and uncircumscribed purulent formations; the joint implication, and the selection of the medullary cavity of the bone as the chief seat of lesion—all point in this direction. The irritation caused by the slight injury to the toe, aggravated by the subsequent additional irritation of the long and trying walk in a youth of feeble constitutional vigour, having once started diffuse inflammatory action, it is probable, I think, that in its rapid progress upwards the first situation in which this action localised itself was the medullary shaft of the femur, and here we find it expending itself in the greatest intensity of effect. This, then, we must consider as the climax of the disease, and that which, being the paramount and terminal lesion, should give the title to the whole case. The knee-joint I look upon as having been independently involved, and as the result of the same pyæmic tendency; and the entire absence of lymph exudation, and of granulations in it, I think to be confirmatory of this view.

The manner in which we observe the disease in this case to have involved the medullary shaft of the bone, and at the same time to have caused destructive inflammation of the knee-joint, without direct continuity through the osseous structures between the two lesions—skipping over, as it were, the epiphysis—might appear at a first glance to be peculiar, but at the same time that it affords us an additional argument

for the general constitutional or pyæmic nature of the affection; it is not without analogy in the apparently protective property or power in limiting disease which the epiphysary lines seem, in certain cases, to possess; for example, in chronic necrosis; and, moreover, similar instances to the present one have been recorded. One of the most remarkable, and, in this sense, similar, is a case reported by Mr. J. Hutchinson in Vol. XIV. of "The Pathological Transactions of London," in which, in the case of a youth, aged seventeen, destructive disease of the knee existed, with an otherwise healthy state of the epiphysary extremities of both tibia and femur, while, beyond the epiphysary lines in both of these bones, the cancellous tissue was softened, and in the case of the latter had become puriform.—*March 11, 1876.*

Sarcoma Oculi.—MR. WILSON said: Amongst the most interesting diseases which the surgeon has to deal with—interesting as regards the vitality of the organ and the life of the patient—are, I think, intra-ocular tumours. I lately had an opportunity of exhibiting a so-called pigmented sarcoma of the choroid which I removed from the eye of an elderly gentleman. I have to lay before you to-day a specimen of non-pigmented sarcoma of the choroid which, in its microscopical character, resembles the pigmented sarcoma—in fact, their microscopical characters are nearly identical, the only difference between them being that the one is pigmented and the other non-pigmented. The person, aged about forty, from whom the specimen was taken consulted me in September last, not so much for this eye as on account of the safety and well-being of her left eye, she having lost the sight of the right one some time previously. The right eye was giving her no trouble; it was simply blind, and did not occupy her attention; and what brought her to me was to obtain my opinion and advice with a view to retaining her left eye in a state of safety. Before giving my opinion as to the sound eye, I wished to ascertain the state of the other one. She was rather reluctant to allow me to examine the first one, but eventually did so, saying that it was merely blind, and that there was nothing the matter with it. On examination, however, I found a state of affairs which very much alarmed me. There was a bright reflection from the interior of the eye, principally at the temporal side. On more carefully inquiring into the cause of the reflection, I found that the *fundus oculi* had advanced forward towards the lens, and therefore that the rays of light, impinging on the bottom of the eye, were easily perceived by the observer, but only in certain positions of the patient and of the observer's head. On further examination I found that something was pressing the retina forwards, that the retinal vessels were distinctly visible, and that the retina itself could be observed. In a healthy eye we cannot see the retina, it being a transparent structure, and recognisable only by means of its vessels. In this

instance it was slightly turbid, and consequently both it and the vessels could be perceived. There was neither pain, nor ache, nor redness—nothing, in fact, except the blindness. I learned that this state of things had existed for about a year, and that she had had advice about it, but that there did not seem to be much certainty about the diagnosis. However, I came to the conclusion that there was a tumour within the eye, and that sooner or later it would have to be removed. As the patient herself did not seem anxious about it, or seem inclined to enter into the question of this eye, I said nothing about it, but I gave her an encouraging opinion with regard to the other. I asked her if she ever had pain in the eye, for it struck me as extraordinary that a tumour should be increasing at the temporal side and encroaching on the ciliary region, and yet that there should be no pain. However, she asserted that she had no pain, and laughed at me for suggesting it. That was on the 24th of September. On the 26th she returned, complaining of pain and some “cold” that she had got in her blind eye, which was also blood-shot. The pain was not much, but it extended up the forehead, and was principally in the eyebrow. At this time, and for two days after, the fundus was completely turbid—the details of it could not be seen. The vessels of the retina were now invisible, and some effusion seemed to be poured out into the vitreous chamber, which concealed the structure of the retina. The tension of the eyeball was largely increased. My diagnosis was that the tumour had, from some cause or other, taken on increased activity, and I made up my mind to remove it. Before undertaking so formidable an operation I advised her to try change of air for a few days, and she did so. In four days afterwards she returned to me suffering intense agony. She had had no sleep or rest, day or night. A subcutaneous injection gave her some relief on the following night. On the day afterwards I removed the eyeball. One curious thing occurred after the removal of the eyeball, and which I had never seen before—namely, that the conjunctiva in which the globe was situated was shot or protruded out as if by some elastic substance behind it—whether blood or what I could not say—and remained so for two or three days. Within an hour after the operation the pain ceased, and from that time to the present day she has not suffered a single pain or ache. The other eye remained good. On opening the eyeball I found confirmation of my diagnosis—a large tumour (now discoloured by immersion and hardening in Müller's fluid), springing from the temporal side of the eyeball, and projecting into the interior of the eye. It has encroached on the most delicate and sensitive portion of the eye—the ciliary region, where it was pressing on the ciliary nerves and causing the intense pericranial pain by reflex action. The lens is quite normal. The retina is detached, and stretches, funnel-shaped, from the optic nerve entrance towards the ora serrata. This occurred only within the

last few days of the life of the eye, for when I saw it first it was visible, and the retina was *in situ*. The specimen exemplifies the way in which the eyeball is enucleated out of the capsule without anything being removed except the offending organ itself. On a microscopic examination of the specimen it presented well-marked characteristics of sarcoma. There is, however, this peculiarity about it, that it is composed not merely of round, but of spindle-shaped sarcoma cells, so that we have here two distinct forms of cells, both of which are characteristic of the disease mixed up together in the way that Pagensticker has delineated. This section, made by Dr. Rainsford by the freezing process, discloses the sclerotic becoming impregnated with the diseased growth which you see. In the meshes of it we can perceive a number of those sarcoma cells scattered through it, and gradually permeating it, so that this tumour, which, apparently to the unassisted eye, was confined to the interior of the globe, was rapidly making its way into the sclerotic, and would have impregnated the whole of it and finally burst through the sclerotic and protruded externally. As it has been removed, and as the optic nerve and orbital structures are not implicated, we may reasonably hope that the disease will not return. Another peculiarity of this example of the disease is the condition of the blood-vessels. We see that the blood-vessels are, as it were, central *foci* of these diseased cells, which seem to originate about the blood-vessels and then radiate and spread out around them, and are more numerous at the vessels than anywhere else. I have mentioned that this tumour springs from the choroid. There are two or three different forms of these tumours occurring within the eyeball. One, of which this is a specimen, is the non-pigmented sarcoma springing from the choroid; another is the pigmented sarcomatous tumour springing also from the choroid or ciliary body; and the third is the gliomatous sarcoma springing from the nerve layer of the retina, and the characteristic of which is that it is composed chiefly of neuroglia and of nerve structure.—*March 11, 1876.*

Malignant Disease of the Abdominal Viscera.—DR. GRIMSHAW said: This specimen, taken from the body of a man who died in Steevens' Hospital on Thursday last, presents remarkably good illustrations of disseminated malignant disease of the abdominal and thoracic viscera. The patient presented himself at the hospital on the 22nd of February last, saying that he had been quite well until two months previously, and then began to suffer from dyspeptic symptoms. These went on for three weeks before his admission to the hospital, and then he found some swelling of the abdomen. At first he did not particularly notice this, but afterwards he began to feel considerable pain in the left portion of the epigastric region. On his admission it was found that there was a large tumour occupying the right side of the abdomen, and extending to a certain degree across the

median line towards the left side. This tumour proved to be caused by an extensive enlargement of the liver. On feeling it the surface was found to be rough, and nodules were detected in various places. There was considerable pain on pressure over the left side, and but little or none on the right, which was the chief seat of the disease. He also complained of cough, and on examination dulness was discovered over the whole right side of the chest, especially at the lower portion. He did not complain particularly of pain in the chest; he complained of pain right across the upper part of the abdomen, extending to the right side, not referable especially to the chest, but such as is usually found in cases of disease of the liver. He admitted that he was of rather intemperate habits. He was a shoemaker, and, in addition to the peculiarities caused by the presence of the tumour, had that peculiar depression of the sternum and twisting outwards and forwards of the xyphoid cartilage, which is so frequently met with in persons of that trade. The diagnosis I arrived at was that it was a case of malignant disease of the liver, in which the lung had been secondarily attacked. I was rather at a loss to account for the extreme sensitiveness of the portion of the liver towards the left side as compared with that of the right, but the cause of this was afterwards apparent on the *post mortem* examination. He gradually went on from bad to worse. At the time of his admission there was a considerable quantity of fluid in the abdomen; this gradually increased so much that, in order to relieve his distress in breathing, tapping of the abdomen became necessary. The fluid drawn off was rather darker than that usually found in ascites, and contained a number of lymphoid shreds and large nucleated cells. On opening the abdomen, the cavity appeared to be almost entirely occupied by the liver, which was of great size and weight, and found to be filled with nodules of cancer, disseminated in every possible direction in both lobes, especially the right. Some of them are of considerable size, and some had undergone softening. The liver is extensively diseased, and filled with these deposits. On examining the stomach, we found what I believe to have been the cause of the great pain produced on pressure over the adjacent part of the liver. There was a large mass of cancer in the walls of the stomach, which were ulcerated on the internal aspect. This curious ulcer must have been of considerable age, and involved the coats of the stomach through and through. The stomachic symptoms were less marked than they often are in cases of extensive disease of the liver, so that there were no grounds during life for suspecting such an extent of stomachic disease as was found in this case. Since the *post mortem* examination was made, and looking at the parts as they are now, I believe that this cancerous ulcer of the stomach was the original seat of the disease. The spleen, a portion of which was removed in the *post mortem*, was extensively engaged. It is not so thoroughly infiltrated with disease as the liver,

but the nodules are of a similar character. The man had but little jaundice, and that just before death. The gall-bladder is apparently healthy. In the vicinity of the biliary ducts there was a great mass of diseased glands, so that these could not have escaped a considerable amount of pressure. There was some swelling of the feet, which may also be accounted for by the pressure of this mass of glands upon the inferior cava. The kidneys are apparently free from anything like cancerous disease, but the left kidney is harder than it should be, and appears to be in a state of incipient cirrhotic disease, probably owing to the patient's intemperate habits. The right kidney was removed, for the purpose of a minute examination of some small nodules, which were found along the renal vessels. On examining the lungs, we found the right lung extensively diseased; the left lung also less markedly affected. The nodules are chiefly on the surface of the lung, and are to be felt in all directions, some of them being very minute. One remarkable appearance seemed to indicate that there had been a sort of inoculation. In some of the fissures of the lungs, where large nodules were observed on one surface, on the opposite small ones, in an early stage of growth, were found. The heart was healthy, and the aorta atheromatous. The glands of the abdomen, the lumbar glands, and those near the liver were all involved. The pancreas is also involved, as are also the glands near the roots of the lungs. In the great omentum there were some large masses of cancerous nodules, with a few small ones. One or two in the mesentery, but nothing like the general dissemination that was apparent in the liver and lungs. The symptoms did not vary much from those usually found in such cases. The disease is a remarkably good specimen of this form of cancer.—*March 11, 1876.*

GELSEMINUM AS AN ANTIPYRETIC.

SOME notes on the therapeutic value of gelseminum (or gelsemium?) have already appeared in the *Periscope* (Vol. LXI., pp. 90, 303). Dr. Gray, in *The N.Y. Med. Record*, June 10, claims for gelsemium the attention of all who wish to avail themselves of the best means of combating fever. In his opinion the drug is an unrivalled febrifuge. He has given it in every case which has come under his observation for some time past where there has been a rise of temperature above that of health, and in not a single case has it disappointed his expectations of reducing heat and promoting comfort. He thinks the full effects are obtained by small, frequent doses—two drops of the tincture for an adult every hour until the fever abates, then every two hours until free perspiration is produced—and that given in this way, its reported ill effects upon the heart or nerves are not produced. He generally combines bromide of potassium, for the sake of the quieting effect of the salt, with the gelsemium.

CLINICAL RECORDS.

Cases of Heart Disease. By FRANCIS CRUMPE, M.D.

SUDDEN death was as common at all periods as it is now, but formerly it was more frequently attributed to apoplexy or prolonged syncope, arising from fright or sudden shock of the nervous system, or some other natural cause. Disease of the heart, however, was not then, in the majority of such cases, ever contemplated or suspected to exist, until Corvisart, in his "*Maladies du Cœur*," drew the attention of the profession to the effect of disease of this organ in suddenly destroying life. *Post mortem* examinations and the investigation of heart disease—first by means of Laennec's discovery, and secondly by experiment—have since that period become more common, and numerous valuable communications on the symptoms and nature of such affections have been made, both in this country and also abroad. Practitioners being now well acquainted with the use of the stethoscope, can generally satisfactorily determine when disease of the heart exists, when functional and when organic changes have taken place, and what structure or chamber of the heart is affected, their diagnosis being confirmed or corrected by the results of *post mortem* examinations.

To show that functional affections of the heart may prove immediately fatal, or, though not fatal, yet may be attended by most distressing and alarming symptoms, I give the following two cases:—

CASE I.—The writer of this paper, when a young man commencing practice, used to dine at the County Club daily. The table was always well furnished—malt was drunk at dinner, with three glasses of sherry, and a bottle of claret after dinner; a supper of oysters in all manner of dressing, and lobsters when in season, followed by wild duck or barnacle, accompanied with malt, brought to a close each day a not unpleasant mode of living. His occupation required daily considerable exercise, pedestrian and equestrian, and having a strongly-built frame and excellent constitution, he conceived himself proof against disease. However, he began to feel painful pressure of the large toe against the boot, which at the time he attributed to striking the fore part of the foot against a stone in an uneven road. By degrees pain and swelling of the instep followed, and relief was only obtained by slitting up the boot from the toe to the upper part of the instep; and being daily engaged in professional duties, not confined to bed, and partaking daily of the same viands, after some days the pain began to subside, and finally vanished. In some time after,

while in a deep and refreshing sleep, in the middle of the night he was suddenly awoke, roused up by the most violent action of the heart, accompanied by excessive pain, unremitting, but increased at every contraction of the heart, and a sensation of impending death. It was not a simple palpitation, such as arises from and may at once be produced by over-exercise, or by any sudden affection of the mind. It communicated the sensation as if the heart was swinging in the pericardium, rotating itself on its axis, and trying to detach itself from the aorta. No relief was obtained from any position adopted. At last he lay down, quite overcome and prostrated, and gradually fell into a slumber, and the cardiac sensation subsided. In the morning he began to contemplate the terrible night he had spent, and to consider from what cause it could have originated.

He believed he had a maternal hereditary claim to be affected with gout, several of that branch of his family, male and female—to some of whom he had a strong corporeal and mental resemblance—being subject to that infliction. He also pondered on the mode of living he had adopted, and at once decided to abandon the enticing allurements of the good cheer of the Club for a homely dinner of plain food, with beer, often water, for drink. He has since required no medicine, and now for more than forty years he never had any further indication of a gouty diathesis.

I look on this sudden affection of the heart as misplaced gout. The sense of pain was most distressing, and had it continued longer must have proved fatal. It has left no organic disease of the heart behind.

CASE II.—I was sent for to visit a gentleman, aged about fifty. He was tall, of spare make, in early life had been in military service. He was very subject to gout, confined to the feet. When I saw him he was in bed, confined by one of these attacks, not suffering at the time more than usual. It was my first visit to him, and, while talking to him on different matters, he suddenly said he was sick, called for a basin, sat up in the bed, and vomited once freely. The act was hardly completed when he lay back dead. There was no struggle for life. He never had had any affection of the head, nor was he suspected to have heart disease. No *post mortem* was allowed.

The following are cases of organic disease of the heart:—

CASE III.—A woman, aged forty, of spare make, long subject to chronic bronchitis. Her occupation was selling apples, stationary in the street in all kinds of weather. On a frosty morning, when walking out, her feet slipped from under her, and she fell, by her own account, with full force on the nates. At once disabled she was brought to the County Infirmary on a stretcher. She was anasarious in the lower extremities,

the right leg was in a state of abduction, everted, slightly bent, and at least two inches longer than the other limb. The limb affected might be easily everted much more, but could not be inverted. When examining the place of injury, it was necessary to use some force for reduction to fix the trunk, and apply extension. While doing this her breathing became more oppressed and hurried, and her countenance darker. I felt her pulse, and immediately discontinued any further proceeding for fear of her dying on the table. The pulse was peculiar; it beat with the usual fullness and firmness two beats—one—two—then an intermission, which lasted some seconds. This was followed by a tremulous, feathery quivering, lasting many seconds, so quick as not to be counted, and so feeble as to be hardly perceptible to the fingers or to the stethoscope. On this ceasing the pulse again assumed its natural strength for the two beats. This state of pulse was uniform. She was placed in bed, and ordered a gentle diuretic. The same night did not complain of unusual pain. On the nurse-tender next day going to her bedside, to see if she wanted anything, it was found that she was dead. The patients next her had not perceived anything unusual.

The next day, on *post mortem* examination, the lungs in some places were found thickened, the heart had lost its natural shape and form, and had become more of a rhomboid form. It was immensely hypertrophied, both in length, breadth, and circumference, of a dark colour, particularly the left ventricle, which in feel was soft and boggy, forming a large pouch-like cavity, full of dark fluid blood. The walls of the ventricle were so thin and attenuated when washed out and held between the eye and the light, that they were in some places obscurely diaphanous and easily torn by the fingers, having lost their normal firmness. The valves and openings appeared healthy. The injury of the hip-joint will be hereafter mentioned. The great peculiarity of this case was the state of her pulse. Having met, in practice of more than fifty years, numerous diseases of the heart, I never met one with the above symptoms. It appeared to me as if the quivering tremulousness arose from the feeble action of the muscular fibres trying to recover themselves, so as to effect the two regular beats..

The two following cases being of rare occurrence, it may be worth while to mention them :—

CASE IV.—A servant man, aged about forty-five years, stated that for a considerable period he was subject to pain in the region of the heart, but which had now so increased that he was obliged to leave the service he was in. He pointed to a spot near the left nipple, about the sixth rib, which he could cover with the finger, as the seat of the pain. His pulse was natural, tongue clean, all the functions regular. The pain gradually increased, was unremitting. Symptoms were similar to those

of angina pectoris, but he experienced no relief from treatment for that complaint. He had no cough, and the lungs were perfectly sound. On stethoscopic examination, heart's action was normal. He began to refuse his dietary, not that he could not take it, but he desired to die sooner than continue in his present suffering, and always pointed with his finger to the one spot, corresponding with the apex of the heart as the position of his sufferings. He was always cheered up when he spoke of death. He gradually got weaker, and said to me on a morning visit, "Now, sir, I am longing for death. I have only a short time to live. I make a request, when I die, that you will examine and open me, and try to find out my complaint; it is not known, and it may be of service to some poor person affected as I am." I lay stress on these expressions, as he was the only patient who ever made such a request to me.

On a *post mortem* examination, lungs perfectly sound; heart natural in colour, feel, and size; ventricular openings and valves perfectly healthy. On pressing my thumb against the septum cordis, I did not find a yielding pliability but a firm resistance. Here an ossification existed in the centre of the septum, having muscular fibres at both sides; it extended from the base of the heart toward the apex. In half an inch of the apex it bifurcated, having two sharp points at the extreme end; it was thicker than a playing card, two inches and a half in length, an inch broad at the base of the heart, and became slightly narrower at the extreme end towards the apex. He did not complain of pain anywhere else, and the leading and only diagnostic symptom he had was the unremitting pain in the region of the heart.

CASE V.—John Reardon, a militiaman, aged twenty-five, a well-built and muscular man, was brought into the Co. of Kerry Infirmary, his breathing being short, quick, and panting, as we see in a person over-exercised. He had a constant short humming cough. His pulse was quick, feeble, and irregular, the heart's action violent and strong, with a rushing sound masking the natural sounds of the heart. He now found himself unequal to the smallest exertion, but said he previously enjoyed the best health until the last month, when his breathing became hurried. There was a tumultuous extension of the veins of the neck, and a strong sound under the first bone of the sternum, opposite the arch of the aorta. He stated that he slept but little, as, being a mess-waiter, he was obliged to be up until late at night, to rise at reveille. He said that he generally drank one pint of whiskey every day, in glassfuls, at distant intervals, but was never drunk or tipsy. He died in a very short time. On dissection there was found to be serous effusion on the right side of the chest. Both lungs were healthy. The heart appeared natural in size, colour, and firmness. In the left ventricle all the chordæ tendinæ of the right or anterior mitral valve were found detached from the carnæ

columnæ, and scattered in different directions—some transversely, some in a direct line towards the aorta, and some under the valve. The carnesæ columnæ of the right were not so developed as those of the left. This valve was shorter than its fellow, colour not so white or shining, rougher in feel, but not ossified; it was firmly attached at both extremities, but between these it was completely detached from the auriculo-ventricular membranous junction, allowing the finger point to pass under it, between it and the heart, into the left auricle; the heart, full of blood, coagulated in shape of polypi, extending into the blood-vessels.

These cases are mentioned as not being of common occurrence in heart-disease, and being beyond the pale of medical relief.

TREATMENT OF CYSTITIS BY ATROPIA ENEMATA.

THIS is the subject of an article by Wm. Semple, M.D., published in *The Virginia Medical Monthly* of June, 1876. Dr. Semple says that most of the cases of acute cystitis that have come under his observation have occurred in young girls with whom the menstrual function had not become regularly established, and the attacks have commenced soon after a menstrual period, and in unmarried women when the function, before its cessation, becomes irregular. He has not found occasion to resort to the introduction of instruments into the bladder for purposes of examination or treatment since he has adopted the method here recommended. This method consists in the administration by enema into the rectum of from forty drops to a drachm of solution of sulphate of atropia (one grain to eight ounces of water), to which is added sufficient carbolic acid to prevent the formation of organic matter and the deposit of atropia. The dose is added to half an ounce of water for administration, and given twice in twenty-four hours. It uniformly and immediately arrests the frequent strangury and painful micturition, gradually checks the mucous and sanguineous discharges, and relieves the supra-pubic pain with the cystic inflammation. When the urine is alkaline, Mettauer's nitromuriatic acid is given to correct it; and when it is so acid as to irritate, the acidity is corrected by antacid remedies, of which the bicarbonate of potash, with subnitrate of bismuth, is generally preferred, because of the tonic effect of the bismuth and its very soothing effect on the mucous surfaces of the urinary organs. When constipation exists, which is frequent, it is relieved as occasion requires, generally by the German pulvis glycyrrhizæ compositus, until the bowels begin to act regularly from the effect of the atropia, which generally soon results. Several cases are reported to illustrate the success of this method of treatment.—*Boston Medical and Surgical Journal*.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday,
July 22nd, 1876.*

| Towns | Population in 1871 | Births Registered | Deaths Registered | DEATHS FROM ZYMOTIC DISEASES | | | | | | | Annual Rate of Mortality per 1,000 Inhabitants |
|--------------|--------------------------|----------------------|----------------------|------------------------------|---------|------------------|------------|-------------------|-------|-----------|---|
| | | | | Small-pox | Measles | Scarlet Fever | Diphtheria | Whooping Cough | Fever | Diarrhoea | |
| Dublin, - | 314,666 | 662 | 493 | — | 5 | 12 | — | 2 | 14 | 8 | 20·3 |
| Belfast, - | 182,082 | 521 | 316 | — | — | 2 | — | 8 | 3 | 13 | 22·6 |
| Cork, - | 91,965 | 195 | 172 | — | 2 | — | — | 2 | 6 | 6 | 24·3 |
| Limerick, - | 44,209 | 116 | 95 | — | — | — | — | 1 | 5 | 6 | 27·9 |
| Derry, - | 30,884 | 71 | 37 | — | 2 | — | — | 1 | — | 2 | 20·5 † |
| Waterford, - | 30,626 | 88 | 33 | — | — | — | — | — | 1 | — | 14·0 |
| Galway, - | 19,692 | 55 | 25 | — | — | — | — | — | — | — | 16·5 |
| Sligo, - | 17,285 | 34 | 18 | — | — | — | — | — | — | — | 13·5 |

Remarks.

The death-rate continued to decline, except in Limerick, and it was comparatively low. No return was sent in from the Glendermot District, Londonderry, during the last three weeks of this period, so the death-rate for that city is doubtful. In London the rate of mortality was 19·8 per 1,000 of the population annually, in Edinburgh it was 17·8, and in Glasgow 20·0. The warm weather was causing a rapid increase in the deaths from diarrhoea in the English towns towards the close of the period—the weekly number of deaths in twenty towns (including Dublin) being 60, 88, 188, and 352 respectively. In London the diarrhoeal deaths in the four weeks were 30, 49, 116, and 249 respectively. Of the last-mentioned number (249) of deaths, 209 were of *children under one year old*. In Dublin zymotic diseases were by no means rife—fever and scarlatina being the most fatal. The Registrar-General has introduced an improvement in the Dublin returns—since the 1st of July the deaths in public institutions, instead of being included in the numbers for the districts in which the institutions are situated, have been assigned to the

districts from which the deceased were admitted, and the district death-rates have been calculated on the mortality so corrected. Applying this correction, the death-rate for the Dublin Registration District for the period is 19.1 instead of 20.3 per 1,000 annually.

METEOROLOGY.

Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of July, 1876.

| | | | |
|--|---|---|----------------|
| Mean Height of Barometer, | - | - | 30.066 inches. |
| Maximal Height of Barometer (on 15th at 9 a.m.), | | | 30.455 „ |
| Minimal Height of Barometer (on 28th at 9 a.m.), | | | 29.515 „ |
| Mean Dry-bulb Temperature, | - | - | 61.9° |
| Mean Wet-bulb Temperature, | - | - | 56.8° |
| Mean Dew-point Temperature, | - | - | 52.5° |
| Mean Humidity, | - | - | 71.6 per cent. |
| Highest Temperature in Shade (on 16th), | | | 87.2° |
| Lowest Temperature in Shade (on 27th), | | | 46.0° |
| Lowest Temperature on Grass (Radiation) (on 12th), | | | 40.1° |
| Mean Amount of Cloud, | - | - | 54 per cent. |
| Rainfall (on 10 days), | - | - | 1.337 inches. |
| General Direction of Wind, | - | - | W. and N.W. |

Remarks.

Beautifully fine weather prevailed until the 26th, from which day showers fell frequently. On the 6th and 7th some rain fell in Dublin, and at 10 45 p.m. of the latter day a beautiful lunar rainbow was seen to the N.W. On the 11th an anticyclone became established over England and Ireland. This system ushered in a period of light winds, clear skies, and great heat. In Dublin the influence of a daily sea-breeze was beneficially felt, as the heat was never excessive, except on one day—the 16th, when the shade maximum was 87.2° at 40, Fitzwilliam-square, West. This was the highest reading of the thermometer recorded by me in sixteen years. Inland even higher temperatures were registered, but central England experienced the greatest heat, the maxima in London being—13th, 85°; 14th, 90°; 15th, 92°; 16th, 92°; 17th, 90°; 18th, 80°; 19th, 80°; 20th, 83°; 21st, 85°; 22nd, 90°; 25th, 85°; 26th, 85°. Wednesday, the 26th, brought a plentiful supply of rain to Ireland and the North of England—the fall at Dublin amounting to .764 of an inch in about fourteen hours on that day. A solar halo was seen at 2 p.m. of the 6th, and high winds blew on the 9th and 26th. It is remarkable that neither thunder nor lightning was observed throughout the month in Dublin. Some severe thunderstorms, however, were experienced in England.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

CONGENITAL RENAL TUMOUR COMPOSED OF STRIPED MUSCULAR FIBRE.

FOR the description of this very remarkable pathological specimen we are indebted to Professor Cohnheim, to whom it was sent for examination. The clinical history is briefly as follows:—A female child, previously perfectly healthy, and descended from a remarkably healthy stock, came under observation when nearly a year old, at which time a tumour, about the size of a closed fist, was discoverable in the left lumbar region. The tumour increased rapidly in size, and, *pari passu*, the health of the child declined; the appetite failed; the bowels became constipated; a gradually-increasing dyspnoea became established; ultimately, hectic symptoms set in, and the child died in a state of extreme emaciation in three months from the commencement of the illness. The urine was never at any time albuminous. The *post mortem* examination was restricted to the peritoneal cavity, on opening which the various viscera were found to be dislocated by the tumour; the diaphragm was pressed considerably upwards; the liver and spleen, otherwise quite normal, were turned on their edges; the entire intestines were shoved over to the right side in such a manner that the descending and transverse colon had to be separated from the right margin of the tumour. The principal tumour was egg-shaped, the vertical diameter measuring 25 cm. (10 inches!) and the transverse varying from 12 to 17 cm. It was covered by a firm fibrous capsule, through which its nodulated character could be felt. The capsule was readily torn off, and the tumour was then seen to be one of the right kidney, the upper half of that organ forming the apex of the tumour; that and some few of the posterior lobuli situated in the lower portion being the only true renal structure remaining. The normal tissue did not appear to be separated by any very distinct line of demarcation from the tumour. The ureter was easily traced, running over the front of the tumour and being loosely connected to it by connective tissue. The tumour itself consisted of a mass of more or less rounded nodules, corresponding to the condition felt on the surface, the colour of which, in most instances, was medullary white, and in others somewhat pinkish. The consistence varied, being softer in the pinkish nodule, firmer, and occasionally tough and leathery in the white, while in some places the section showed a distinct fibrillation. The general aspect of the tumour in some sections resembled an osteo-sarcoma, and in others a uterine fibroma. On examining the right kidney it was discovered that

this organ also was the seat of a similar, though very much smaller, tumour, which projected from its anterior and upper surface as a round, flat nodule. It was pinkish-white and soft, and was sharply defined from the normal tissue in the deeper parts, while on the surface the two structures seemed to blend with one another. The kidney was otherwise perfectly healthy. The microscopical examination of the larger tumour showed some of the nodules to consist almost entirely of striped muscular fibre. These were in bundles of 20-40, which interlaced in all directions just like bundles of unstriped fibre in a myoma of the uterus. The striation was beautifully marked; acetic acid brought out the nuclei; no sarcolemma was discoverable. The fibres were very uniformly small in diameter, but were exceedingly long, neither beginning nor ending being traceable. A few primitive bundles were, however, met with, in which the fibres were short and pointed, resembling striped spindle-cells. While the greater part of the tumour was composed of this structure, some nodules—namely, those of the pinkish hue and soft consistence—presented all the characters of a round-celled sarcoma; and again, in some few others, myomatous and sarcomatous structures were both present in varying proportions. This, in particular, was the case in the tumour of the right kidney, muscular fibre being found only in the centre of the nodule. Microscopical examination showed, further, that the tumour was much more sharply defined from the normal tissue than was at first supposed, a distinct membrane of connective tissue separating the two in most cases. Cohnheim remarks that this is the only instance in which a tumour of striped muscular fibre has been met with in the kidney. He regards its occurrence on both sides as indicative of its being congenital, and he is inclined to account for it as a *vitium primæ formationis*, whereby some primitive muscle cells from the region of the vertebral plates in the early embryo became mixed up with the cells from which the genito-urinary apparatus is developed. He is doubtful as to how to view the relationship between the sarcomatous and myomatous elements in the tumour, but, on the whole, thinks it probable that the former are in a stage preparatory to being developed into spindle-cells and muscular fibres.—Virchow's *Archiv.* LXV. 1.

R. J. H.

BENIGN TUMOURS OF THE BREAST.

MM. LEON LABBE and PAUL COYNE have recently published a valuable work, entitled, "*Traité des Tumeurs Benignes du Sein.*" The following are the conclusions presented after a thorough and complete study of the subject:—First.—There is found in the breast a group of tumours which may be designated as *benign*. This benignity which they all present is due to this special anatomical fact, that they are distinctly limited by a fibrous capsule which isolates them from the rest of the gland and

surrounding tissues. Second.—All these tumours derive their origin from the glandular elements, viz., the periacinal tissue, or from the epithelial lining. The anatomical forms under which they chiefly occur are four:—three, *fibroma*, *sarcoma* and *myxoma*, depend upon the connective tissue; only one originates in the epithelial lining, *intra-canalicular epithelioma*. Third.—All these tumours are benign compared with cancer, but the degree of benignity varies in certain given conditions. Those depending upon the connective tissue are benign in the absolute sense of the word. They do not occur again in the immense majority of cases, except as a consequence of incomplete removal. Those which originate in the epithelial tissue are not malignant, unless they have destroyed their fibrous investment. Fourth.—A great number of symptoms are common to them all. Nevertheless, it is now possible to assign to each symptomatic characters permitting a clinical differentiation; and although the results so far obtained are not numerous, yet the time can be foreseen when this can be completed. Fifth.—The pathological anatomy of benign mammary tumours demonstrates that simple *enucleation* of the growth is generally an incomplete operation; for the lesions, arrived at their highest development in the tumour itself, are already in process of development in the adjoining glandular tissue. Therefore, in order to make a *complete operation*, it is necessary to pass the limits of the tumour, and perform *partial amputation*. Sixth.—This rule, which may be followed in a distinctly circumscribed tumour, *fibroma*, will not answer when the tumour is very large and of rapid development, *sarcoma*, *myxoma*; then it is necessary to make a complete amputation of the breast.—*American Practitioner*, June.

POST MORTEM APPEARANCES SEVEN YEARS AFTER THE SUCCESSFUL
PERFORMANCE OF OVIARTOTOMY.

OPPORTUNITIES of investigating the *post mortem* appearances in cases where the operation of ovariectomy has been recovered from are of rare occurrence; and the following details of a case of the kind, in which Dr. T. W. Hime (Sheffield) had operated successfully seven years before the patient's death, may not be uninteresting to the readers of the Journal. The subject of the operation was a healthy-looking peasant woman, of the age of forty-eight. The tumour had apparently commenced after her last confinement, six years before its removal; its growth was consequently slow and gradual, was unattended with any interference with her general health, the only symptoms being irregularities of menstruation, with occasional passage, at her periods, of masses "like the lining of an egg-shell," and one severe attack of flooding. When operated upon the tumour had attained considerable dimensions, was very tense, and projected a good deal from the abdomen; and, from its more than usually pendulous character, Dr. Hime was enabled to diagnose correctly

the presence of a rather longish pedicle. The operation was performed on August 20, 1868. Numerous adhesions were found to exist between the tumour and the anterior abdominal parietes, and also in the neighbourhood of the liver, and of the intestines; they were severed, however, without the aid of the knife. The pedicle was secured by a whip-cord ligature, and returned into the abdomen. She died in the month of August, 1875, of cardiac disease, under which she was known to labour at the time of operation, having in the meantime enjoyed uninterruptedly good uterine health, with the exception of occasional profuse menstruation. The following is the account of the *post mortem* appearances found in the abdomen:—"On passing my hand through an incision in the abdominal wall it was met by a compact, firm mass, filling the whole abdominal cavity. This consisted of the whole of the intestines, omentum, &c., matted together by quantities of lymph. It was impossible to remove even a short piece of intestine separately. On cutting through it the appearance was that of a solid body perforated by large canals (the intestines) in various directions. Yet she never suffered any intestinal inconvenience. The omentum was inseparably connected with the peritoneum above, as well as with the intestines below. No trace whatever remained of the strong whipcord ligature which tied the pedicle, nor could I even find a cicatrix or mark of where the pedicle had been. The left ovary was in its place and healthy."—*Med. Times and Gaz.*, July 22, 1876. T. E. L.

BROMO-HYDRATE OF QUININE.

PROFESSOR GUBLER claims for bromo-hydrate of quinine several advantages, in comparison with the sulphate. It is more soluble, more rich in the alkaloid, and less liable to induce cinchonism, owing to the sedative properties of the bromine it contains. He asserts that it is more rapid in its action when used hypodermically, owing to its superior solubility, and that it is unattended by the irritative effects in the cellular tissue which are not unfrequently caused by the sulphate. The dose ranges from three to five grains per diem.—*L'Union Médicale*. S. W.

FORMATION OF EPIDERMIS BY THE TRANSPLANTING OF HAIRS.

DR. SCHWEININGER (*Vierteljahr. für die prak. Heilk.*, Erster Band, 1876) reports successful results in inducing cicatrization by transplanting to granulating surfaces hairs pulled out by the roots. Placed upon ulcers they formed as many centres of new epithelial growth, which spread outwards, coalesced, and produced rapid and complete cicatrization. These islands proceeded without doubt from the cells of the outer root sheath, which is continuous with the epidermal cells of the rete mucosum, so that epithelium is here developed from pre-existing epithelial cells.—*Boston Med. and Surg. Journ.*

DIAGNOSIS OF PERI-NEPHRITIC ABSCESS IN CHILDREN.

DR. V. P. GIBNEY (Pamphlet, pp. 20, N. Y., 1876), after detailing nine cases of this obscure and interesting disease, comes to the following conclusions as to its symptoms and diagnosis:—In typical cases the disease generally begins with a rigor or two, febrile exacerbations more or less severe according to the acuteness of the attack, lancinating pains in the lumbar region, loss of appetite, and general indisposition. In fact, the invasion does not differ materially from that of other acute inflammatory lesions, unless perhaps the pain be more localised, and, if the child be very young, the locality of the pain is not discovered. During the first week the symptoms change very little, except in degree. Constipation is always present. Very soon we have preternatural immobility of the spine, a stooping forward, with elevation of the shoulders. After a week or ten days, spasm of the psoas muscle occurs, the gait becoming characteristic of that so commonly regarded as the second stage of hip-joint disease. The urine is of high specific gravity, and is loaded with urates. The tumefaction appears, and the pain becomes excruciating. If an exit be given to the pus, a speedy recovery follows; if this be delayed and the contents of the sac be really pus, it burrows along the cellular tissue, producing an immense abscess, a spontaneous opening is effected, and the convalescence is protracted. If, on the other hand, the inflammatory process has not resulted in suppuration, the contents are most likely serum, and resolution is effected. In the matter of diagnosis, the points upon which he has placed the most reliance are the acute nature of the attack, pain in the region of the kidney, flexion of the thigh, the prone position, tenderness on pressure when the child is old enough to give any reliable testimony, the tumefaction, and, finally, the fluctuation. To analyse these symptoms and differentiate from those diseases which simulate very closely the one in question, is not always free from difficulty. In peri-typhlitis the pain and tenderness are chiefly confined to the iliac region; there is pain more or less of a colicky nature, and the affection is generally associated with typhlitis. Should the tumour in peri-typhlitis appear in the lumbar region, then a differential diagnosis could not well be made; and practically it would be unimportant, for in that case we would most likely have a perinephritic abscess complicating the peri-typhlitic. In hepatic abscess the function of the liver is deranged, the tumour is located within that region and is movable with respiration. The symptoms of acute nephritis are like many of those now under discussion. From the history and the examination of the urine the question can be definitively settled. Renal calculi might mislead one, but the absence of fever, the paroxysmal nature of the affection, and the urinary examination should guard one against error. Idiopathic psoriasis in children and aneurism of the abdo

minal aorta are so rare that they need not be considered. Intra-thoracic lesions can be excluded by a physical examination. In diagnosing this affection from hip-disease we should depend principally on the position of the limb, the duration of this position, the involvement of the psoas alone in the contraction, and the absence of tumefaction or induration about the trochanter or groin. The diagnosis from spinal caries is almost impossible, and can only be made by paying attention to all the previously mentioned points in conjunction with the history of the case. The prognosis in primary uncomplicated peri-nephritis is very favourable. All of Dr. Gibney's patients recovered in from two to six months. In seven out of the nine there was no discoverable cause of the disease.—*Phil. Med. Times.*

A CASE OF CHYLOUS ASCITES PRODUCED BY PARASITES.

A WOMAN, thirty-nine years of age, who had lived for a long time in Surinam, came under the observation of F. Winkel for ascites, which had set in about a year after her return to Germany. At first treatment served to prove beneficial, but afterwards the fluid increased so much as to render *paracentesis abdominis* necessary. About two litres of fluid, resembling buttermilk, were discharged. Microscopic examination revealed in the fluid a number of thread-like active organisms, 0·2 mm. long and 0·01 broad. They had a rounded head, with four or five cilia, and a sharp-pointed tail. The patient improved at first, but afterwards died in her own house, without being again seen by the doctor. No abnormality was at any time observable in the urine. Menstruation went on regularly, although owing to the ascites there was prolapse of the uterus and bladder. After the first tapping a painful tense swelling of the left leg, and particularly of the veins, set in, which lasted a considerable time. Winkel notices the similarity of the entozoon found in his cases to the *filaria* observed by Lewis, in chyluria (*Cbl.*, 1873. 335, 480), and is of opinion that in his case the filaria were in the bowels, and made their way into the lymphatics and the peritoneum—apparently they were also in the blood, and may have, perhaps, induced the swelling of the veins. From what the patient stated, complaints similar to what she suffered from, seemed to be not uncommon in Surinam.—*Centralblatt*, No. 25, 1876, June 17.

J. M. F.

PARALYSIS FOLLOWING ACUTE DISEASES.

At the recent meeting of the American Neurological Association, Dr. Webber, of Boston, read a valuable paper upon the paralysis which follows diphtheria, puerperal and typhoid fevers, and the acute eruptive diseases. The many cases which he had collected and observed were divided into those in which autopsies had been made and those which

resulted in recovery. In regard to the pathology, it would seem that the most constant lesion was disease of the anterior columns of the spinal cord, with or without a neuritis affecting some special nerve. The first case reported was observed by Dr. Webber, and resulted in recovery. A patient previous to the birth of her child had been in comparatively good health, but after parturition suffered from an attack of puerperal fever. During the fourth week following the birth of her child, paralysis of the lower extremities supervened; this was accompanied by incontinence of urine. There was also paralysis to a less degree of the upper extremities. Eventually the case recovered. The second case, also observed by Dr. Webber, was one of paraplegia following typhoid fever. The paralysis appeared suddenly during convalescence, and it was eight months before the patient was able to walk. Three or four years afterward a marked improvement took place, but fifteen months ago weakness of the extremities again occurred, accompanied with twitching of the muscles. From the general character of the symptoms it would seem as if there was a lesion in the cord. Dr. Webber read a number of collected cases in which autopsies were made, giving the clinical history and pathological anatomy. One case of hemiplegia after variola showed a spot of softening in the left anterior cornu of the spinal cord. A case of dysentery followed by hemiplegia presented the evidences of myelitis affecting the anterior cornu of the left side. A case of muscular atrophy, developing after puerperal fever, showed at the autopsy sclerosis of the anterior part of the cord. Two cases of paralysis, a sequence of variola, showed changes in the cord. One case of paralysis following diphtheria presented nuclei in the gray matter, with hæmorrhage into the spinal membranes. In one case after vaccination a neuritis of the radial nerve supervened, and the patient was unable to extend the fingers of that arm. In conclusion, Dr. Webber said that the paralyzes of the post-febrile class were ephemeral in the majority of cases, but not in all. When the case was obstinate it was fair to assume that the cord in all probability was affected, but in many cases, where the trouble was slight, it was difficult to tell where or what the lesion was.—*N. Y. Med. Jour.*, July.

ON THE USE OF SALICYLATE OF SODA IN DIABETES MELLITUS.

In the *Berliner Klinische Wochenschrift*, No. 49, 1873, and No. 5, 1875, Professors Wilhelm Ebstein and Julius Müller showed that in a number of cases of diabetes mellitus, the administration of carbolic acid had the effect of arresting the diabetic symptoms. In many cases it had no beneficial effect. This variance in its action depends probably upon the fact, yet to be proved, that the symptoms which we group together under the name of diabetes, do not always depend on the same pathological process. In No. 5 of the *Berl. Klin. Wochenschr.*, for 1875, the authors also published a case of diabetes in which they had tried salicylic acid

(gr. 5-8 per diem) without the slightest benefit; but after the employment of twenty-six grains of carbolic acid, in the course of four days, all diabetic symptoms subsided. Whether the failure of the salicylic acid in this case is to be referred to the small doses given, or to the nature of the case, Ebstein cannot decide. In No. 24 (June 12), 1876, of the same journal, the latter author publishes two cases of diabetes mellitus, in which carbolic acid and other therapeutic agents proved unsatisfactory, and in one of which the salicylate of soda completely removed the symptoms, while it greatly relieved them in the second. From eighty grains in three doses, per diem, at first, to one hundred and sixty grains later on, were taken by these patients. Large doses in the commencement gave rise to vertigo, tinnitus, and fainting. In a footnote the author mentions that he has since had other cases testifying to the efficacy of this salt in diabetes. At the same time his observations do not lead him to think that the drug effects a radical cure of the disease, but rather that, as with all previously known anti-diabetic medicines, it possesses only a passing power. Still, even this is no slight gain if it be found that in the relapses it is also efficacious. Further experience must teach us the cases in which to use salicylate of soda, carbolic acid, and all the other remedies in their proper places.

H. R. S.

NITRATE OF LEAD AS A LOCAL AGENT IN ERYSIPELAS.

DR. JOHN FIRNAT says that after having tried tincture of iodine, camphorated ether, nitrate of silver, carbolic acid with oil of turpentine, acetate of lead ointment, oxide of zinc ointment, and styptic collodion locally in erysipelas, in connexion with the internal treatment, he has found nitrate of lead with glycerine to give far more satisfaction. The formula he gives is—Nitrate of lead, sixteen grains; cherry-laurel water, half a fluid drachm; glycerine, three and a half fluid drachms. Sig.—Brush well the affected part, and one and a half inches beyond, every three hours, and give for the next twenty-four hours—tincture of the perchloride of iron and glycerine, of each half an ounce. Sixteen drops in water every two hours. Dr. Firnat has also used the nitrate of lead, 10 to 15 grs. to ʒj. glycerine, in eczema of the head; washing previously with tar-soap, and then applying it, with entire success, in connexion with small doses of Fowler's solution and iodide of potassium.—*Phil. Med. Times*, June 10.

A NEW COLOUR-TEST FOR AMYLOID DEGENERATION.

ACCORDING to Prof. Herschel, aniline blue and red, dissolved in glycerine, will give a permanent dark rosy-red stain to tissues which have undergone amyloid degeneration, healthy portions assuming at the same time a blue colour.—*Phil. Med. Times*, June 10.

Case I.



Case II.



engraved by J. H. Porter, Boston

From a Photograph

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PART I.

ORIGINAL COMMUNICATIONS.

ART. X.—*Some Remarks on Excision of the Elbow-joint; with Two Cases.*^a By Surgeon-Major J. H. PORTER, Assistant Professor of Military Surgery, Army Medical School, Netley.

THERE is probably no operation in surgery in which more satisfactory results may be obtained for the patient and surgeon than that of excision of the elbow-joint, provided the cases are judiciously selected, the operation properly performed, and the after-treatment carefully carried out; and yet examples are frequently met with in which, from want of due precautions, the patients are encumbered with useless limbs. I therefore feel it is unnecessary to apologise for publishing two cases, in which, I trust, some of the circumstances connected with them will be found interesting, if not instructive.

Recently two patients came under my observation in whom the elbow had been excised with most unsatisfactory results; in one he had lost all motion in the shoulder, elbow, and wrist-joints, as well as that of the hand and fingers of the affected limb, due to want of attention in the after-treatment; and in the other there was no power of extending the forearm, and the patient was unable to flex the fingers, which had become stiff and straight. In this case the want of success was attributable to the method

^a Being the summary of a paper read before the Southampton Medical Society, August 1st, 1876.

of operation, which was by the H incision, and inattention to the after-treatment.

Such unfortunate results naturally induce the surgeon to guard against and prevent similar consequences in his own practice; and, in investigating the experience of others, I was much impressed with the importance of the observations made by Mr. R. Hodges, of America, and Mr. C. T. Maunder, of London, respecting the method of operation to secure extension of the forearm. The former remarks that, in excision of the elbow, no transverse cut across the triceps should be made, and the latter (*vide British Medical Journal* of July, 1871) that it is essential to securing extension of the forearm, which power is not unfrequently lost, and for which he says the operation is responsible to preserve those tendinous fibres of the triceps muscle which are sent from beyond the attachment to the olecranon to blend with the fascia of the forearm, and especially with that portion of the fascia overlaying the anconeus muscle. Mr. Maunder commences the operation by a longitudinal incision at the back of the limb, in length three or four fingers' breadth both above and below, and crossing the point of the olecranon. He next sinks the knife deep into the triceps muscle, and divides it also longitudinally into two portions, the inner one of which is the more firmly attached to the ulna, while the outer portion is continuous with the anconeus muscle, and sends some tendinous fibres to blend with the fascia of the forearm. It is these latter fibres that are to be scrupulously preserved.

To these suggestions of Drs. Hodges and Maunder I paid strict attention in the two cases to be hereafter detailed, and with the happy result of obtaining most perfect power of extension, as may be seen by the accompanying illustrations. It is scarcely necessary to observe that, with ankylosis in the straight position, there may also be power of extension; but as that result is not the only one desirable, it is necessary to try and induce the power of flexion so as to produce a generally useful limb, such as one possessing the natural motions of the shoulder, wrist, forearm, hand, and fingers. To obtain these results but little has been said by authorities, except as regards the movements of the elbow, and on these points opinions differ as to the period at which motion should commence. This, of course, might be influenced by the condition of the patient and the state of the wound.

In the two following cases the limbs were first simply laid in an

extended position on a firm pillow, and the wound dressed with lint saturated with carbolised oil, and cold applications to the outside. In both cases slight movement of the fingers was commenced the day after operation; about the fifth day supination and pronation of the forearm, and as soon as the inflammation consequent on the operation had subsided, flexion of the elbow, with slight extension, to prevent the ends of the bones coming into contact.

When the patients were strong enough to sit up and go about, exercises were enforced with a weight suspended to a cord passed over a pulley, which brought into action all the muscles and joints of the affected limb.

The electric induction current was also used with decided advantage.

CASE I.—T. W., a delicate-looking lad, fifteen years of age, belonging to the Duke of York's school.

Family history of phthisis, his father and an uncle having died of that disease.

In March, 1875, he had a sharp attack of rheumatism, which affected the elbow and knee joints, confining him to bed for two months, at the end of which period the swelling of the joints had subsided, with the exception of the left elbow, which remained swollen and painful.

In August he was received into Netley Hospital for change of climate, his general health being impaired. The left elbow was uniformly enlarged, but there was no bulging of the synovial sac. There was slight pain in the head of the radius, increased by rotating the hand. The forearm was slightly flexed, and the elbow one inch larger in circumference than the right.

His general health improved, but in October an opening of a sinus appeared on the inner aspect of the arm, about one and a half inches above the condyle, through which a probe could detect exposed bone; there was, however, no decided evidence as to the exposed bone being connected with the joint, and he was treated with tonics and nourishing diet, the joint being kept at rest, with a hope that the diseased bone might be thrown off.

There was very little change till the beginning of December, when the elbow became much enlarged, and as compared with the sound one, was three inches larger in circumference. The skin over it had become pale and mottled, and the cutaneous veins enlarged, but there was no great amount of pain.

On the 3rd of December he accidentally struck his elbow against a table, which set up active inflammation, and early in January, 1876, when all inflammatory symptoms had subsided, it became apparent that the joint was so extensively diseased that excision would be necessary.

On the 10th of January I excised the joint by the longitudinal incision, the limb being rendered bloodless with Esmarch's bandage, and the patient being under the influence of ether.

After the operation the limb was placed in a straight position on a firm pillow, no vessels were tied, and there was very little hæmorrhage.

On the 11th the lad was directed to flex his fingers, which he did with some difficulty, but without pain. On the 15th of January, or the fifth day after the operation, he flexed his fingers with ease, which were perfect in sensibility, and slight passive exercise of the forearm was commenced, so as to secure pronation and supination, as well as flexion of the elbow-joint.

These exercises were practised daily till the 8th of February, when he commenced the use of a 1 lb. weight suspended by a cord over a pulley, which he worked by a little help from the sound arm.

His general health gradually improved, and on the 1st of March the wound of operation had quite healed, and the arm was daily becoming stronger.

On the 3rd of June he was discharged from hospital, it being a few days less than five months since the operation. He could then perform the following motions—scrub and sweep the floor, lift a considerable weight, place his hand behind his back so as to button his trousers, supinate or pronate the hand, extend the forearm, brush his hair, and feed himself with a fork. The motions of the shoulder-joint were perfect, as well as that of the wrist, hand, and fingers. The sensation in the limb was similar to that in the sound one, and he possessed in every respect a useful arm, which would enable him to earn a livelihood.

CASE II.—Sapper G. S., Royal Engineers, twenty-eight years of age, of healthy appearance, with a good family history. In 1868 he struck his left elbow when mining, after which it became swollen and painful. This passed off, but in 1870, when quartered in Bermuda, it again became affected, but after suitable treatment the disease disappeared. In 1875, when quartered at Gibraltar,

he again hurt it, since which time he has been unable to use it, the joint having become swollen, and painful on pressure. He was invalided to England, and arrived at Netley Hospital last December, when the joint was found much swollen and painful, but no symptoms to denote disease of the cartilages or bone.

In April, 1876, suppuration set in, and several abscesses formed, which were opened in front of the joint. His health now became much impaired, and it was found on examination that the joint was implicated.

On the 2nd of May I excised the joint by the longitudinal incision, the limb being rendered bloodless with Esmarch's bandage. The operation was followed by considerable oozing, necessitating the opening of the wound. The day after the operation movement of the fingers was commenced. On the 7th of May, or fifth day after the operation, pronation and supination were commenced, and on the 12th flexion and extension of the forearm. On the 31st of May he used a 1 lb. weight suspended over a pulley, which was increased up to 4 lbs. on June 15th.

By the 14th of July the wound of operation had completely healed, and, feeling strong and well, he attempted mowing, and cut down one hundred yards of grass; which he says he performed with little inconvenience.

With the exception of the power of flexion of the forearm, all the motions of the limb are perfect, but in this he is daily improving, being able to feed himself with a fork, and brush his hair; he can also button his trousers, place his hand behind his back, and lift considerable weights.

The muscles of the arm are fairly developed, as may be seen by illustration No. 2.

In Case No. I. there was gelatinous disease of the joint with caries of all the bones.

In Case No. II. there was pulpy disease of the joint and extensive caries of the humerus and ulna.

The amount of bone removed in both cases was about two inches.

ART. XI.—*Case of Adherent Pericardium, with Remarks on Diagnosis and Pathology.* By ROBERT SAMUELS ARCHER, M.B., Univ. Dubl.; Resident Physician, West Derby Union Hospital, Liverpool.

JAMES R., aged thirty-six years, of medium height, spare and haggard-looking in appearance, was admitted to the Weston Super-Mare Hospital on May 11th, 1874.

Previous History.—He had served for fourteen years and a half in the army, but had never been on foreign service. Intemperate in his habits. I could trace no reliable history of syphilis. Twelve years before he came under observation he had suffered from an attack of acute rheumatism.

State on Admission.—The patient complained most of cough, vomiting, and intense thoracic pain referred principally to the cardiac region. He was suffering much from orthopnoea. His pulse was 70, very small, weak, and intermittent. The apex beat of the heart was displaced downwards, being situated between seventh and eighth ribs, at a point about two inches outside a line drawn vertically through the left nipple. *The intercostal space was retracted during the cardiac systole, and bulged out during the diastole.* A distinct thrill was communicated to the hand placed over the apical region. The cardiac action was very rapid, irregular, tumultuous, and tumbling. The entire want of proportion between the force and rapidity of the heart and the pulse at the wrist at once attracted my attention. The former registered more beats in a period of time of equal duration, and was proportionally much stronger than the latter; epigastric pulsation; visible pulsation in external jugular veins; there was slight congestion and oedema of lower lobe of left lung; there was no anasarca or ascites; the extent of cardiac dulness transgressed considerably its normal bounds, especially in the direction of the epigastrium. Ordered *ms. 10 of tinct. digit., 3ss. liq. bism., in ʒi of infus. calumbæ, every four hours.*

Progress of Case.—May 12th, passed a very restless night; complained of great pain in epigastrium. The mucous membrane of fauces and inside of cheeks was raw and abraded; very thirsty; breath had a peculiar heavy odour; vomiting somewhat relieved, but he brings up a quantity of foul-smelling, slightly frothy, dark-coloured mucus, which he says "comes from the pit of his stomach."

May 13th.—Complained a good deal of pain under the scapulæ; dyspnœa much more marked; the cardiac action was somewhat calmer; character of pulse unaltered; takes very little nourishment.

May 14th.—Heart's action quieter, and pulse has increased in fulness, but is still irregular, intermittent, and bears no proportion to the cardiac beat. I detected a slight apical murmur, but could not determine the question as to whether it was systolic or diastolic, on account of the great irregularity and excited action of the heart; in fact, I found it impossible to differentiate accurately even the cardiac sounds; pulsation in jugular veins not so well marked.

May 15th.—Seemed easier; cardiac action much calmer; pulse 70, stronger, but still not at all synchronous with the heart's beat. Taking with the other medicine, *ms.* 4 of *liq. strychniæ*.

May 16th.—Much relieved; could lie down, which he had not been able to do till now since admission; heart registered 82 beats per minute; pulse 70. Both the cardiac action and pulse were still irregular and intermittent.

May 17th.—Heart beats, 87 per minute; pulse, 70; complained of pain and tenderness on pressure in epigastrium; vomiting returned; bowels open.

May 18th.—Chest and body generally covered with an urticarious eruption.

June 3rd.—Since the last report the patient had been very comfortable, so far as the symptoms referable to the cardiac lesion were concerned. At this date, however, he took a decided change for the worse. On making my morning "round" I found him sitting up in bed suffering from intense dyspnœa, his extremities and face quite blue, heart beating most violently and irregularly, and the pulse at the wrist so feeble that I could not count it. The urticarious eruption had gradually resolved itself into one of a scaly nature (*psoriasis diffusa*), and now his entire body was encased in scales, which came off in the form of large flakes, or small branny particles, which lay scattered over the bed and surrounding floor, and left the cutis underneath furrowed, hyperæmic, shining, hypertrophied, and quite devoid of moisture. 9 30 p.m.—Could detect no pulse at wrist; all the symptoms were intensified with the exception of the action of the central organ which was not quite so violent; delirious, saying "some one had come in to poison him with *digitalis*;" moribund. 10 35 p.m.—Asked the nurse for a drink, expectorated some mucus, and fell back lifeless.

Post mortem.—June 4th, 1874, dead sixteen hours; no cadaveric rigidity; body much emaciated; face, neck, and posterior aspect of body generally of a dark livid colour from hypostatic congestion; trunk, superior extremities, face, neck, and legs to some extent, but not so much as rest of body, covered with large flaky scales of epidermis. The skin underneath, or where these scales had fallen off, was furrowed and hyperæmic.

Thorax.—On opening the chest the lungs did not collapse to the same extent as they normally do. The right lung was firmly tied down by old, tough, fibrous adhesions of the visceral and parietal layers of the pleura. The posterior surface of the left lung was held by fibrous connexions to the costal parietes, but not so closely or universally as its fellow on the right side. Its inferior aspect was also adherent to the diaphragm by bands of recent lymph. The left pleural cavity contained a quantity of straw-coloured fluid, in which floated shreds of lymph. The lungs were universally congested; this hyperæmia was especially well marked in their posterior parts. The pericardium was closely and intimately attached to the pleuræ on either side by old firm well-organised adhesions, and these were particularly well developed on the left side. The pericardial sac was totally obliterated, its parietal and visceral layers being firmly and universally adherent; so close and intimate were these adhesions, that on attempting to separate them the wall of the right auricle gave way in front, and allowed some dark-coloured blood to escape. The heart was globular in shape, dilated, and weighed together with roots of the great vessels and adherent pericardium, 17 ounces. It measured 6 inches from the root of the aorta to its apex, and the same transversely. The apex, round and truncated, was formed by the left ventricle. The ventricles contained firm fibrinous clots, the one in the right larger than that in the left. These clots extended continuously from the auricles into the ventricles, and were *ante mortem*. The left ventricle exhibited a well-marked degree of dilatation, its walls were thin; this tenuity was most conspicuous in the neighbourhood of the apex, relatively speaking. The auricles were much dilated. The left auriculo-ventricular orifice was smaller than normal—not admitting the tips of two fingers; its margin was very rigid and indurated, and on section presented a cartilaginous appearance. The curtains of the mitral valve were thickened throughout their whole extent. The aortic valves, thick and indurated, contained; scattered here and there in their meshes, small nodular masses.

The corpora Arantii were very large. The tricuspid orifice and its valves were healthy, as also were the valves guarding the opening of the pulmonary artery. The muscular structure of the heart was soft, soddened, friable, and degenerated, and had a pale-coloured appearance.

Abdomen.—The condition of the stomach presented a fair specimen of dilatation of that organ; it contained some beef-tea and brandy. The mucous membrane was of a pale ashy-grey colour, mottled here and there with slate-coloured spots, varying in size from a pea to a bean; it was rather pulpy. The other abdominal viscera appeared healthy. By the request of his friends the cranium was not opened.

Remarks.—On reviewing the clinical facts and the *post mortem* appearances of James R.'s case, I have come to the conclusion that the universal adhesion and firm fusion of the parietal and visceral layers of the pericardium, commenced with pericarditis during the attack of acute rheumatism about twelve years before the patient came under observation. The adhesions then formed were still further strengthened during subsequent subacute attacks, till at length the heart, becoming gradually more and more hampered by the addition of fresh connexions from time to time, was rendered incapable, owing to the necessary degeneration of its muscular tissue, of contracting with sufficient force to propel the blood to the minute vessels of the brain, and thus death from syncope was the natural result. We may regard the fact of *ante mortem* well-organised clots existing, which extended from the auricles to the ventricles, as another proof of the failure of the heart's action, which reached its climax at the time of death.

Simple adhesion of the pericardium is admittedly a lesion most difficult of recognition during life. In fact some authorities go so far as to assert (and I am inclined to agree with them) that it is almost impossible to diagnose this morbid condition, except there has been the opportunity of observing the patient from the commencement of the attack of pericarditis through its various, and oft hourly, changing stages. Hope regarded a double jogging murmur as almost pathognomonic of adhesion, but I think most careful clinical observers will agree with me that this cannot be looked upon as an absolutely diagnostic sign.

There is one very valuable physical sign which renders the diagnosis of adherent pericardium not quite so great an enigma, and that sign is *retraction of the intercostal space over the region of*

the apex during systole. This becomes still more important as a means of diagnosis, if, *during the heart's diastole, the space is bulged out.* By referring to the clinical record of the case, it will be perceived that this sign was present, and by its means principally (of course due importance being attached to all the other circumstances) I was enabled to come to a fair conclusion concerning the actual state of affairs. This retraction and bulging out of the intercostal space is thus explained by Niemeyer:—"The heart is shortened during systole, and a vacuum would form were not the space filled either by the descent of the heart or the depression of the intercostal space; but if heart and pericardium be adherent, no descent can take place, and hence depression of the intercostal space must substitute it."^a

This phenomenon is most frequently present in cases where the outer surfaces of the pericardium and pleura have grown together. Where this condition does not obtain, a portion of the lung may intervene and fill up the vacuum caused by the retraction of the apex, and thus this most valuable, and I may add, only absolute means of detecting pericardial adhesion will not be manifested. From a series of cases analysed by himself and Valsalva, Morgagni^b comes to the conclusion that palpitation cannot be regarded *above* as a sign of adhesion. Senac^c also concurs in the same opinion. I do not say that palpitation does not exist in these cases, for it does; but what I assert is that it is a symptom common in a greater or less degree to all organic changes of the heart, especially if there be obstruction to the outflow of blood. We are all familiar with this condition also in mere functional derangement. M. Forget considered tumultuous and laboured action of the heart, smallness and irregularity of the pulse, precordial anxiety, dyspnoea, and a disposition to faint, and symptoms of obstructed circulation, as diagnostic of the lesion under consideration. Although all these symptoms were present in my case—and valuable aids they were—I should not have ventured with any certainty on a diagnosis of adherent pericardium, had not I observed also the *systolic retraction and the diastolic out-bulging of the intercostal space in the neighbourhood of the apex.*

Amongst authorities on this subject, Corvisart^d regarded frequent

^a Niemeyer's Text-book of Practical Medicine. Vol. I., p. 390.

^b The Seats and Causes of Disease, translated by Alexander. Book II., Letter XXIII.

^c De la Structure du Cœur. Vol. IV., Chap. XI.

^d A Treatise on the Diseases and Organic Lesions of the Heart and Great Vessels, translated by Hebb. P. 32.

flushing and dragging at the cardiac region as diagnostic symptoms; the latter he ascribed to the movements of the diaphragm in respiration pulling at a heart fettered by adhesions.

Skoda mentions apex depression of the intercostal space together with upward and inward displacement of the heart. From what I observed in the present instance, I think *dislocation downwards and outwards is more likely to occur in cases of universal adhesion*. Retraction and elevation of the epigastrium are mentioned by other writers; however, much importance cannot be attached to these symptoms.

Laennec, Bertin, and Bouillaud, considered the diagnosis impossible; and when such was the opinion of these authorities, it is not to be wondered at if men of less intellectual calibre experience a difficulty in this respect.

With regard to the morbid anatomy of the lesion, opinions are as much at variance as concerning its diagnosis.

Rokitansky's ^a description agrees with the morbid appearances found in James R.'s case—viz., "dilatation of the cavities with attenuation and relaxation of the walls." "Aneurysma cordis passivum" was applied to this condition by Corvisart.

Rokitansky speaks of the intimate changes and degeneration of the cardiac muscle as follows:^b—"In dilatation arising from pericarditis, the muscular substance has a dirty rusty-brown or yellow-like colour, is *easily torn*, and appears as if half boiled"—morbid changes which correspond almost exactly with those found in our case. Rindfleisch ^c describes it as "yellow atrophy," and mentions as exciting causes degeneration in febrile disease and inflammatory disturbance of the pericardium.

Dr. Hope states that the heart is usually hypertrophied and dilated. The hypertrophy is explained by this author as being produced by the extra efforts of the muscular structure to drive the blood from a heart tied down and restrained in its freedom of action by adhesions. I cannot agree with Hope in this explanation of hypertrophy, at least in ordinary cases of universal adhesion. Dr. Stokes is also opposed to this view of the causation of hypertrophy; and, arguing from the analogy of voluntary muscles (which become atrophied as the consequence of any mechanical obstacle to their free contraction), looks upon atrophy as being a condition more easily explicable when any change of the muscle takes place.

^a Pathological Anatomy.

^b Op. Cit.

^c Pathological Histology. Vol. I., page 273.

As regards dilatation, it is Hope's opinion that want of elasticity is produced by previous inflammatory changes, and thus the cavities become dilated. In addition to this inflammatory explanation of its origin—which, no doubt, is a very potent source of mischief—in this case, at least, we may regard it as depending, to a large extent, on inability of the ventricles, shackled by abnormal connexions, to contract with vigour enough to expel the blood, and so that fluid would of necessity accumulate in the cavities, causing passive distension in addition to active.

I would venture to suggest that the relatively greater extent to which the thinning of the muscular tissue of the apex had proceeded, was caused by the firmer adhesion contracted between the heart's serous sac and that of the lungs at this position than elsewhere. Thus the apex would be much more restrained in its contractions, and the blood being allowed to collect, as it were, in an inactive and undisturbed *cul-de-sac*, dilatation would naturally supervene, thus, as I have stated before, atrophy of the muscular tissue (from disuse) would be the result, and this we regard as the chief cause of the round and truncated form of the apex. Rokitsansky * states that "when dilatation affects the left ventricle it is most commonly and most decidedly seen at its apex when it first manifests itself," but this applies to dilatation from any cause whatever.

Stokes, without denying that hypertrophy and dilatation may exist, doubts whether such is necessarily, or in most instances, the case, and proceeds to say: ^b—"I have often found the heart in a perfectly natural condition with the exception of an obliterated pericardium." But evidently in these cases there could not have been pleuro-pericardial adhesions in addition to the "obliterated pericardium." This writer says: ^c—"It is in those cases where valvular disease is either coexistent with or subsequent to the first inflammation of the sac that hypertrophy and dilatation appear as remote consequences of pericarditis."

Barlow does not at all consider hypertrophy and dilatation to be the necessary consequences of an obliterated sac, but looks upon obliteration in the majority of cases as tending to produce atrophy of the heart.

A very remarkable feature in the case, and one which immediately attracted my attention in the first instance, was the great dispro-

* Patholog. Anat. Vol. IV., p. 157.

^b Diseases of the Heart and Aorta.

^c Op. Cit.

portion between the heart's action and the pulse at the wrist. This condition depended on two causes—firstly, probably stenosis of the mitral orifice had something to say to it, but, I am inclined to think, not much. The second, and most important factor, is to be sought in the ineffectual, and, as it were, dying struggles of a mechanically fettered heart to empty itself of a quantity of blood, which even in a healthy state it would have experienced a difficulty in expelling.

NEW STETHOSCOPE.

In the *Berliner Klinische Wochenschrift*, for 12th June, 1876, Dr. Voltolini (Professor of Otology in Breslau), very warmly lays claim to the invention of the Flexible Clinical Stethoscope, "suggested by Drs. Reid and Morrisson," and advertised by Messrs. Arnold and Sons of London. Professor Voltolini demonstrated this instrument at the meeting of naturalists and physicians, at Breslau, in September, 1874, and described it in the *Wochenschrift* of April, 1875. The only differences in the English instrument are that the gutta percha tubing is half a foot longer, and that it is covered with silk. These are not improvements, as they tend only to the production of disturbing extraneous noises, besides increasing the price. Voltolini says that all who have made use of his stethoscope, and have spoken to him of it, have told him that they heard decidedly better with it than with the ordinary wooden one. In using the latter instrument, the ear-piece is applied to the pinna, which separates and almost completely isolates the hard stethoscope from the hard bones of the skull, preventing transmission of sound from one to the other. If it be intended that the sound be transmitted through the column of air in the stethoscope to that in the external meatus, the wooden stethoscopes are not properly constructed, for the ear-piece does not apply itself air-tight to the pinna. All ear trumpets, for the use of deaf people, are constructed with an ear peg to fit into the external meatus, and it is this principle that Voltolini has adapted in his stethoscope. In the same number of the *Wochenschrift*, Dr. Joseph Gruber (Professor of Otology), of Vienna, extols the new stethoscope, in the first place, from a theoretical point of view, and then draws attention to a special practical advantage of the instrument. He thinks it will be found of great use by medical men who have difficulty of hearing, dependent upon certain defects in the conduction apparatus of the ear, as well as some affections of the labyrinth. In two such cases (*catarrha media chronica*), Gruber recommended the practitioners to try the instrument, and they did so to their complete satisfaction.

H. R. S.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Treatise on the Diseases of Infancy and Childhood. By J. LEWIS SMITH, M.D; Physician to the New York Infants' Hospital, &c. Third edition. London: H. K. Lewis. 1876. Pp. 724.

AMONG the many excellent works which have issued from the American press on the diseases of children, Dr. Smith's treatise deservedly holds a prominent position. Not so encyclopædical as Meigs and Pepper, or yet so minute in pathological details as Vogel, it offers to the practitioner a succinct and trustworthy account of those diseases of infancy and childhood he is most likely to be consulted about. As the second edition of Dr. Smith's work was fully and favourably reviewed in this Journal but three years since,^a it is unnecessary again to notice at any length its general plan and scope. Suffice it to say, that the work maintains its character of being a thoroughly practical one. The author evidently writes only on subjects he has had the opportunity of investigating personally, or of studying clinically and in the *post mortem* room. Thus, Rötheln and Cerebro-spinal Meningitis are now considered for the first time, and this is accounted for by the occurrence of epidemics of these diseases in New York since the appearance of the second edition. Both of these new chapters are excellently done, the description of Rötheln being the best we are acquainted with in the English language.

The author is physician to many asylums for children, as well as to special and general hospitals in which their diseases are treated. His field of observation is consequently large, and he is entitled to give us, as he generally does, his views and the results of his experience with no uncertain voice. By collating, where advisable, the most recent investigations and opinions of others with his own, and thus necessarily re-writing a considerable portion of this edition,

^a Both of these volumes were reviewed in Vol. LIII. of this Journal, p. 15, January, 1872.

^b Vol. LV., p. 326, April, 1873.

he has succeeded in rendering it *au courant* with the knowledge of the day. One excellent feature of the book is its therapeutics. The reader will not be confused by finding here a farrago of prescriptions and a catalogue of drugs, out of which he is left to select for himself what may probably eventually prove a disappointing remedy. Dr. Smith puts forward the general line of dietetic and therapeutical treatment he has found most useful in each case, and recommends the formulæ his own observation and experience have led him to trust in. For example, speaking of the usual local treatment of enlarged subcutaneous scrofulous glands by the daily application over them of the tincture or ointment of iodine, he says:—

“It is my opinion, from observing the effects of these agents, that they are too irritating for ordinary cases. Applied daily, they cause proliferation of the cells of the epidermis, so that in two or three days the thickening of the cuticle is greatly increased, and its external layer begins to exfoliate. It has appeared to me that what we observe in the epidermis illustrates, to a certain extent, what occurs in the gland underneath, as a result of active counter-irritation. The gland does not resolve, its superfluous cells are not destroyed and absorbed, as was desired, but the treatment tends rather to increase the proliferation of the cells of the gland, or the formation in it of true leucocytes. We have seen that a local cutaneous inflammation, as eczema or impetigo, is apt to cause the neighbouring lymphatic glands to enlarge. How, therefore, can we expect to reduce a glandular swelling by a mode of treatment which establishes a similar condition. . . . The correct mode of treating these glands, therefore, as regards external measures, I hold to be, to apply the iodine preparations in such a manner that the largest amount of iodine will reach the glands by absorption, with little irritation of the skin.”

He is not prepared to state what is the best formulæ for the application of iodine in these cases, but feels justified in—

“Recommending the following formulæ, as preferable to the official preparations which are commonly employed:—

- 1st. R. Potas. iodidi, ʒj;
Ung. stramonii, ʒj. Misce.

To be rubbed over the gland several times daily. It should not be applied as a plaster, as it is too irritating and will vesicate. I have known a glandular swelling, which had continued about three months, to disappear in as many weeks, under its use in connection with internal

remedies. Glycerin may be employed in place of stramonium ointment. It makes a nicer preparation.

2d. R. Liq. iodinii compositi,*
Glycerinæ, equal parts.

To be applied three times daily with thorough friction, but less frequently if the skin becomes irritated. In place of Lugol's solution, tincture of iodine may be employed, with perhaps a little larger proportion of glycerin. One of the chief advantages from the employment of glycerin with the stronger iodine preparations is that it prevents to a great extent the shrivelling and desiccating effect on the cuticle, rendering it soft and in a favourable state for absorption.

3d. R. Liquoris iodinii compositii, ʒss.
Aquæ, ʒxv. Misce.

To be kept constantly upon the skin over the gland by lint soaked with it, over which oil-silk may be applied to prevent evaporation."

In caries of the vertebræ the author has noticed an early symptom of the disease, which appears of importance. He says:—

"In cases which I have observed, one of the chief symptoms, and sometimes almost the only symptom in the commencement of the caries, has been neuralgic pain, usually not severe, intermittent, or more or less constant, at some point in the anterior aspect of the body, most frequently in the chest, epigastric or umbilical region. This pain has been present in a larger proportion of cases than pain in the spinal region at the seat of the caries, though Guersant dwells particularly upon the latter as a symptom of caries. Patients with this neuralgia are not infrequently treated for indigestion, or worms, the true nature of the malady not being suspected, and the spine not even being examined. This neuralgia seems to be due to compression of the spinal nerves, by inflammatory exudation at the points where they emerge from the spinal canal. I can recall to mind a number of cases, in which I have on different occasions been asked to prescribe for this neuralgia, which was shown by the sequel to be undoubtedly the result of vertebral caries, and yet with a careful examination of the spinal column could discover no evidence of disease at any point."

In conclusion, we have much pleasure in repeating our former recommendation of this work. It is well printed, has a good index, and a few very fair woodcuts.

* Liq. Iodini Co., U. S. P., or Lugol's solution, similar to the liq. iodi of the B. P.

WORKS ON DISEASES OF THE SKIN.

Outline Drawings for recording Cases of Skin Diseases. By BAL-MANNO SQUIRE, M.B. London: J. & A. Churchill. 1876.

TAKING a hint from the figure outlines which have been in use for some years in the clinical delineation of the physical signs of disease, Mr. Squire has arranged a set of outlines, which will probably be appreciated by many. The first four figures represent general views of the (female) body from before, from behind, and from the right and left sides. In addition, outlines of the face, vertex, hands, and feet are supplied, and it would not require much artistic power to fill in such a sketch of the state and progress of any interesting case as would be serviceable for after-reference and comparison. The outlines of the whole figure are too small to be of much use.

The Treatment of the Scrofulides (Lupus). By H. G. PIFFARD, M.D. New York. 1876. Pp. 11.

THE writer adopts the nomenclature and classification of Hardy, and gives an epitome of some of the most approved methods of treating that intractable disease, lupus, but does not add anything material to our knowledge.

Ichthyosis of the Tongue and Vulva. By R. F. WEIR, M.D. New York. 1875. Pp. 19.

AN interesting *résumé* of the history and clinical characters of the curious patchy affection of the tongue—so called ichthyosis, or, perhaps better, keratosis—the nature of which has been much controverted. To the 58 cases recorded by others, Dr. Weir contributes 10 additional, and the significant fact comes to light that, out of a total of 68 cases, 31 have resulted in epithelioma. One case is reported of the disease attacking the vulva.

Analysis of One Thousand Cases of Skin Diseases. By L. DUNCAN BULKLEY, M.D. Louisville. 1875. Pp. 29.

A TABULAR statement, bristling with the usual array of figures, and useful for comparison with the statistics of other observers. Under the head of erythema, Dr. Bulkley states that he has repeatedly met with instances of *erythema multiforme* in young Irish emigrants just after landing, the eruption appearing to result

from the "disturbed condition of the digestive functions, assisted by neglect of cleanliness, so common under these circumstances."

The Relations of the Urine to Diseases of the Skin. By L. DUNCAN BULKLEY, M.D. New York. 1875.

THE urinary changes in diseases of the skin have been but little studied hitherto, and, as a contribution to the subject, Dr. Bulkley has collected and recorded a number of observations of some interest, but no important conclusions are arrived at.

The Relations of the Nervous System to Diseases of the Skin. By L. D. BULKLEY, M.D. New York. 1874-75.

AN interesting summary, furnishing abundant pathological proofs of the direct connexion between nerve influence and nutritive changes in the skin. In therapeutics the author believes, and justly so, that we shall obtain a much larger measure of success in treating skin cases if, while discarding the class of neuroses as a separate and distinct one, we bear in mind the nerve-relations of a large proportion of affections, including those of the integument, and regulate our treatment accordingly.

In another paper by the same author two cases of Graves' disease, associated with chronic urticaria, are related.

The Management of Eczema. By L. D. BULKLEY, M.D. New York. 1875.

ALTHOUGH a pupil of Hebra, Dr. Bulkley is no blind partisan of the local method of treatment, but follows rather the teachings of the English school. This paper on eczema reads somewhat like a modified abstract of Dr. Tilbury Fox's monograph, to which reference is made. The author again brings forward his favourite "Liq. picis alkalinus" (tar, 3ij. ; caustic potash, 3i. ; water, 3v., M.—to be used diluted), which he thinks preferable in many cases to Hebra's famous "compound tincture of green soap."

Archives of Dermatology: a Quarterly Journal of Skin and Venereal Diseases. Edited by L. DUNCAN BULKLEY, M.D. New York. 1875. Vol. I.; Vol. II., Nos. 1 and 2.

WE have in hand Vol. I. of this young periodical, and the first two numbers of Vol. II. It was started in 1874, and appears to have swallowed up *The American Journal of Syphilography and Derma-*

tology, the decease of which, at the expiration of its fifth year of publication, was announced last summer. It includes several original articles of considerable merit, but the special feature which commends this publication to the notice of those interested in cutaneous affections is the series of excellent and carefully compiled quarterly digests of current literature. In Vol. I. reference is made to over *six hundred* separate books, monographs, and articles in other journals, and, if only for the large mass of scattered observations thus collected and arranged, the new journal deserves a cordial reception and a wide circulation.

On certain Endemic Skin and other Diseases of India and Hot Climates generally. By TILBURY FOX, M.D., and T. FARQUHAR, M.D. Including Notes on Pellagra, Clou de Biskra, Caneotica, and Aleppo Evil. By H. VANDYKE CARTER, M.D. London: J. & A. Churchill. 1876.

Report on certain Forms of Skin Diseases observed in the Madras Presidency. 1874-75. Compiled by SURGEON-GENERAL E. G. BALFOUR.

IN 1872 a "scheme for obtaining a better knowledge of the endemic skin diseases of India" was drawn up by Drs. T. Fox and Farquhar, and was officially circulated among medical officers, not only in India, but also in various foreign and colonial stations.

The Report of Drs. Fox and Farquhar embodies the information thus acquired, and is published under the sanction of the Secretary of State for India in Council.

The first part of the Report contains the analytical summary by the editors of the replies received to their queries, arranged under sixteen different heads, but the chief bulk of the volume is occupied with abstracts of the communications forwarded by medical men from all parts of the world.

The miscellaneous contents include much that European physicians may consult with profit, but we will be excused for saying that the materials, although interesting, are also perplexing, from the want of due arrangement and of a judicial criticism of disputed points. It is, moreover, evident that some of the correspondents have an imperfect acquaintance with the nomenclature and definitions of dermatology, and use terms in a sense different from that employed by Dr. Fox in his scheme, while much confusion is left in the Report itself on the nature of the various sores, boils, and

ulcers, which go by the local names of Delhi sore, Cochin China ulcer, &c. The report on elephantiasis arabum and on lymph scrotum is the longest, and contains valuable papers by Drs. V. Richards and Sheriff Moodeen; but the most interesting articles, to our thinking, in the book, are the special reports by Dr. Vandyke Carter on Pellagra, and on the three allied, if not identical sores, known as Bouton de Biskra, Bouton de Crete, and Bouton d'Alep. Four excellent coloured plates and an engraving of their histological structure illustrate these latter affections, which certainly remind one forcibly of syphilitic eruptions, and support the probability of Dr. Geber's views in this direction.

Much credit is due to Dr. Fox, who is mainly responsible for the critical comments, for the labour he has bestowed upon the elaboration of this Report. Several points of considerable interest have been cleared up, and one peculiar disease—*ainhum*—hitherto unknown in India, has been brought to light by the circulation of the Report. Burmese ringworm, Dhobie itch, Tokelau ringworm, &c., are all shown to be severe forms of ordinary ringworm of the body, and may be designated *tinea circinata tropica*. Malabar itch is an aggravated form of scabies.

Yet we venture to think that vexed questions on the differential diagnosis and intimate nature of tropical skin diseases are not best determined by an English dermatologist pondering them in his study, but that we must rather appeal to the medical officers on foreign service to train themselves in the intricacies of dermatology, and to draw their own conclusions from their own careful observations. To such this volume will prove of much value as a book of reference.

Lectures on Dermatology. By ERASMUS WILSON, F.R.S. London: J. & A. Churchill. 1875. Pp. 224.

THIS, the fourth volume which has issued from Mr. Wilson's fertile pen within the last six years, conveys the substance of twelve lectures on dermatology delivered before the Royal College of Surgeons of England in 1874 and 1875. It is to be hoped that one more volume will be found sufficient to cover the whole of the projected course, and we would then suggest the propriety of condensing the five volumes into a single one of moderate compass, shorn of the verbosity and diffuse repetition which encumber the series.

At the same time a good deal of valuable and recent information

is imparted, with the assistance of the best art of the printer, and we are glad to have a tolerably full account of the treatment of true leprosy by Dr. Dougall's method with gurjun balsam, together with some results of Mr. Wilson's own experience of this oleo-resin as a mild, unirritating stimulant for external use in chronic eczema and lupus. Some interesting notes are to be found on xanthoma, striæ atrophicæ, and a troublesome form of prurigo termed neurotic excoriation.

Atlas of Skin Diseases. By LOUIS A. DUHRING, M.D. Part I. Philadelphia: J. B. Lippincott & Co. 1876. Royal 4to.

WE are much pleased with Part I. of this new Atlas, the first of its kind from our American brethren. Although from the superior style in which it is produced it need not fear comparison with any rivals, we will quote the following judicious remarks by the editor, to show why an *original* Atlas was projected, in preference to a second-hand reproduction of the work of others:—

“It is now universally admitted by those who have had the opportunity of extended observation in this department of medicine, that the same diseases of the skin are more or less dissimilar in their external forms as they occur in one country or in another. This statement is abundantly verified in comparing the cutaneous diseases of the United States with those of Europe. Experience shows that numerous affections present themselves here in quite other forms from those seen abroad. An appreciation of this fact points to the importance of becoming familiar with these disorders as they actually exist among our own people. It is to give to the profession a series of illustrations, representing the dermatology of our country, that the present work has been undertaken.”

In this part there are four beautiful chromo-lithographs of eczema erythematosum, psoriasis, lupus erythematosus, and syphiloderma pustulosum. The descriptive letterpress is accurate, clearly expressed, and is evidently penned by an experienced observer. We heartily wish the new enterprise a wide-spread and generous support, and it is right to mention that the edition is limited, and that the issue will probably be completed within eight, and certainly will not exceed ten, parts.

Food: its Adulterations and the Method of their Detection. By ARTHUR HILL HASSALL, M.D., &c. Illustrated by upwards of 200 Wood Engravings. London: Longmans, Green, & Co. 1876. 8vo, pp. 896.

THERE is no name so well or so favourably known in connexion with the exposure of falsification of food as that of Dr. Hassall. Before his time there were, no doubt, writers upon this subject, and there are people old enough to recollect the sensation created by the publication of Accum's celebrated book, "Death in the Pot." The statements made by the predecessors of Dr. Hassall were, however, very vague, and of altogether too general a character to be of much service to the public. The great merit of Dr. Hassall's work consisted in the definiteness of the information which it gave. He not only minutely detailed the different species of adulterations practised on food, but he boldly named the vendors of the sophisticated articles. From 1850 to 1856 he examined no fewer than 3,000 specimens of the principal articles of food, besides numerous samples of drugs, and the results of his inquiries led him to make the observation that, during those years, "there were few articles of consumption the adulteration of which was practicable, and which at the same time could be rendered profitable, which were not extensively subjected to adulteration." Owing to the exposure of this nefarious system by Dr. Hassall, in the pages of *The Lancet*, and in his works on the adulteration of food and drugs, and to the three statutes in relation to the adulteration of food, drink, and drugs, which Parliament has enacted since the publication of Dr. Hassall's researches, "what we eat and drink" is now to be met with in a state of much greater purity. Adulterated articles are, however, still to be met with; and, no doubt, the practice of fraudulently mixing inferior with superior commodities will never be totally extinguished. There is now an army of public analysts in the United Kingdom, and it is their exclusive business, at least in their public capacity, to analyse all articles that are suspected to be adulterated. To those officials Dr. Hassall's work is invaluable; and, indeed, we do not know what those who hitherto have been professionally engaged in testing food, &c., would have done had they not been assisted by Dr. Hassall's earlier volumes. We can ourselves testify to the value of those works, and more especially to the admirable illustrations which they contain. Provided with a good microscope and Hassall on Food, persons with but a moderate

amount of scientific training could readily detect the adulterations most usually practised, such as, for example, those of mustard, coffee, milk, bread, flour, confections, &c. Dr. Hassall's book contains not only information with respect to adulteration, but it also gives full directions for the complete analysis of water, besides many and interesting facts with respect to the collection, nature, preservation, properties, &c., of food substances. We have but little to say in the way of hostile criticism of Dr. Hassall's book. We can hardly agree with the statement that the flesh of glandered horses, and of pigs affected with typhus, has not, when eaten, produced disease. In the Dublin Zoological Gardens many of the larger carnivora died from eating the flesh of glandered horses; and, at present, the horses intended for the use of these animals are carefully examined by a veterinary surgeon before they are slaughtered. We have seen several cases, too, where whole families were made seriously ill by eating the flesh of "soldier"-pigs.*

Amongst the adulterations of lime-juice Dr. Hassall does not refer to sulphurous acid. In Dublin we believe that the lime-juice, which is so largely sold "as a cordial," almost invariably contains sulphurous acid.

We cordially recommend Dr. Hassall's book, not only for the use of the public analyst—to whom it is well-nigh indispensable—but as one in which medical men will find a great variety of most useful and interesting information.

Medico-Legal Experience in the Bengal Presidency during the years 1868 and 1869. By KENNETH M'LEOD, A.M., M.D.; Surgeon, Bengal Army. Pp. 141.

THIS work is a re-publication of a report to the Government of India, prepared at the request of the Inspector-General of Hospitals. It does not in any way pretend to be a systematic treatise on medical jurisprudence, but simply to analyse and tabulate the 2,869 sudden or unnatural deaths which occurred in 1869. Of the 173 cases amongst these which are assigned to natural causes, heart disease is credited with only 7; apoplexy caused 10; while heat apoplexy is reported to have caused 27. The author is evidently of opinion that, when nothing else can be assigned, heat apoplexy is the most convenient verdict. Of the 2,869 cases, 1,431, or

* The typhus of pigs is termed "soldier" in Ireland, owing to the intense redness which it produces in the animal's skin.

nearly 50 per cent., were cases of homicide by means of blunt weapons. Every Hindoo carries about with him a *latee*, or bamboo stick, 4 or 5 feet long and sometimes adorned with iron hoops at the heavy end. This instrument inflicts incised wounds on the scalp and may fracture the bones of the head, but laceration of the brain is by no means common. The practice of cremation, as well as the rapidity with which putrefaction sets in, renders medico-legal investigations in India often exceedingly difficult. It is not uncommon for a body to be presented for examination partially charred and partially eaten by crocodiles in the river. Suicide is almost as common in India as in more highly-civilised countries—hanging is the most favourite method, opium-poisoning ranks next, and drowning is but little resorted to. Infanticide and abortion are still very rife, the *dhyes* or native midwives being the chief offenders. In cases of abortion one-sixth of the mothers perish. Branding on the region of the pubis is very frequent in the case of women guilty of unchastity. The classification has been very carefully made, and the marginal summary renders the contents of the book easy of access.

Des Indications et des Contre-Indications de l'Hydrothérapie. Par M. LE DR. LEROY-DUPRÉ. Paris: Baillière. 1875.

THIS *brochure*, by the chief physician of the hydro-therapeutic establishment of Bellevue (Seine-et-Oise), gives a brief sketch of the processes and forms of apparatus employed in this specialty, and of the cases to which they are applicable. Like most similar productions, it is written with a strong bias.

Researches into the Antagonism of Medicines; being the Report of the Edinburgh Committee of the British Medical Association. By J. HUGHES BENNETT, M.D. J. & A. Churchill. 1875.

MUCH credit is undoubtedly due to the memory of the late Dr. Hughes Bennett for his persistent efforts in pushing forward the important study of the antagonism of drugs, and the preparation of this Report was one of the last acts of his busy life. The results of over 600 experiments on the lower animals are arranged and tabulated with much labour in 66 tables, and from the diverse nature of the subjects investigated it would be impossible to convey,

in an abridged form, an accurate idea of the important results arrived at. It is sufficient to say that these recent researches of the Edinburgh Committee contain a mass of valuable material which will prove indispensable to all future workers in the same field, although it is not unlikely that such inquiries will, at least in these countries, receive a check during the present state of popular excitement on the question of vivisection.

A Manual of Operative Surgery on the Dead Body. By THOMAS SMITH, F.R.C.S., Surgeon to, and Lecturer on Anatomy at, St. Bartholomew's Hospital, Surgeon to the Hospital for Sick Children; and WILLIAM J. WALSHAM, F.R.C.S., Demonstrator of Anatomy and Operative Surgery at St. Bartholomew's Hospital, Surgeon to the Metropolitan Free Hospital. With Illustrations. Second edition. London. 1876.

THE position of operative surgery as a subject of examination by the licensing bodies in 1859 is well described in the preface of the first edition of this manual:—

“The requirements of the medical examining bodies of this country seem to imply that a practical knowledge of operative surgery should form an essential part of the education of every surgeon, and that henceforth operative dexterity should be acquired by practice on the dead body.”

To meet these “seeming” requirements, the first edition of this manual was published, and, if we may judge of the first by the second edition (for we have not seen the first) its character was quite in keeping with that of the examinations. The meagre course which it sketches is intentionally limited to the operations which can be performed on a single subject, while many well-recognised operations are disposed of somewhat in this fashion:—

“We shall not describe this operation, as its advantages are very questionable on the living subject, and on the dead it is better to perform a resection of the joint.”

The only assistance which the student is likely to obtain from it in acquiring a knowledge of the literature of operative surgery is of the kind which the following passage supplies:—

“(2.) The flap amputation consists in removing a limb by double flaps. . . . Modifications of the flap operation have been intro-

duced by Messrs. Teale, Carden, and Spence; to these we shall subsequently refer more at length."

Surely the student, who takes this text-book as his guide, and relies on it, will learn to attribute to these three surgeons all the merits of perfecting the flap operation.

In a second edition, which the authors tell us has been carefully revised, we might at least expect to find gross and evident errors of text absent, yet we find on page 23, Fig. 9, the posterior tibial artery, as it passes behind the inner ankle, named "Radial," and, page 29, a "grooved bistoury," enumerated amongst instruments required for division of the sterno-mastoid muscle. Such terms, too, as *dorsalis scapular*, the *symphysis pubes*, "*ramus of the pubes*," abound.

The construction of many sentences is, to say the least, peculiar—"the steel director is used for dividing fascia upon," "the direction of the fibres of the *sartorius* are downwards," "where there is no important parts within reach of injury."

One cannot help looking with some amusement and curiosity amongst the operations for stone for a method suitable to the hermaphrodite, suggested by the following:—"Should his subject be either male or female." But the search is fruitless.

Our authors have evidently found it no easy matter to keep themselves within the limits prescribed by their preface. We find them, as it were in spite of themselves, breaking new ground, and suddenly, without notice to their pupils, giving directions for operation on the living. Doubtful advice, too, even in this view of their meaning. For instance, the directions for the operation of tying the femoral artery in "*Scarpa's triangle*" conclude with the following:—

"The vein is very apt to be wounded in this operation if great care be not taken. Should this accident occur, withdraw the ligature, apply pressure over the wounded vein, and tie the artery higher up."

We will not enter on the discussion of the wisdom of this practice, if it be intended to apply to the operation on the living, as we suppose it does. We would merely ask, would it not be better for the student under the ordeal of examination, should he find out his error, to wipe away any blood-stain caused by the wounding of the vein, pass his ligature in the right place, and trust to his error escaping notice, rather than direct attention to it by his compress? If he be merely practising operation on the dead body,

his compression of the wounded vessel seems a waste of time only. This passage occurs in the description of tracheotomy on the dead subject:—

“The dissection should be now continued in the middle line of the neck until the air-tube is fully exposed; all arterial hæmorrhage on the living patient having been arrested, it may be opened by a longitudinal incision, about three-quarters of an inch in extent.”

As an illustration of the mode of operating recommended, we may take the following:—

“The knife, which in this case is always a large one, is held in the full grasp of the hand; it is thus used in circular amputations and in certain other instances to which we shall hereafter have occasion to refer.”

Here follows an illustration (Fig. 5), which is well described further on in relation to circular amputation of the forearm thus—“Grasping the knife in his fist, with its edge turned upwards.” Let us compare these directions for holding an amputation knife with those given by Sir Astley Cooper:—

“Now, gentlemen, in holding the amputation knife, do not grasp it thus, with the entire hand, but take it rather between the finger and thumb, so that the haft may freely play in the hollow of the hand, and at the same time pass between the finger and thumb when the circular incision is made. By adopting this method you may make your first cut in an easy and free manner, and obviate that stiffness which is sometimes observable even in experienced operators.”*

Among the “frequent and exact references to the anatomy of the parts concerned in the various operations,” we notice many passages to which we might take exception, such as the following:—The fibres of the pronator teres muscle run “downwards and inwards.” And again:—

“The anterior crural nerve is external to the artery (the superficial femoral examined in relation to Scarpa’s operation), in the upper part of the triangle, but it soon breaks up into branches, one of which, the long saphenous nerve, remains on the outer side of the vessel.”

We cannot conclude our notice of this work without noticing the following passage, as it introduces, we think, a new error, in

* Lectures on the Principles and Practice of Surgery. By Sir Astley Cooper. London. 1832. P. 410.

place of an old one still current in many text-books. For instance, in the last edition of Mr. Erichsen's "Surgery" we read:—

"Amputation is performed between the proximal and second phalanges (of the fingers) in the same way; but, as a general rule, it should not be done here, because, as no flexor tendon is attached to the proximal phalanx, it is apt to remain permanently extended and a good deal in the patient's way." Such is, we say, a common direction and reason given for avoiding this operation. Our authors say:—

"On the living patient it is not advisable to amputate the fingers at their second joints, as this proceeding would leave the first phalanx not only useless but also in the way, as the first phalanx is unprovided with an extensor tendon."

Now, the truth is, that operations performed at this joint, or even further back, through the proximal phalanx, leave excellent stumps possessing all the movements proper to the bone, provided the case selected be not one in which disease has destroyed the tendons on the palmar aspect—such disease, for instance, as neglected thecal paronychia. In amputations undertaken for other conditions, and particularly primary amputations, such results are readily obtained by any surgeon who will look for them, rather than follow the above rule; sufficient proof that, although neither flexor nor extensor are directly inserted into the bone, yet the new conditions of the stump properly formed supply such attachments, and on both aspects.

Medical Thermometry and Human Temperature. By E. SEGUIN, M.D. New York: William Wood & Co. 1876.

WE have frequently called attention to Dr. Seguin's works on Medical Thermometry. Although not set forth on the title page, this work is, according to the preface, a new edition of a former work. As the former work is not specified, we presume it is that which we reviewed under the title of "Medical Thermometry and Human Temperature," by "C. A. Wunderlich and Edward Seguin, M.D." Why Wunderlich's name should have been dropped from the title page of the present work we are at a loss to tell. The work is as much Wunderlich's as ever, with the addition of some of Dr. Seguin's peculiar views, which might well have been dispensed with. If we reviewed the good portions of the book we

should be again reviewing Wunderlich's great work; if we reviewed Dr. Seguin's additions we should only have again to notice the faults which we have so often pointed out in Dr. Seguin's writings. What we may term the "sensational" paragraphs in the work are more ludicrous than anything we have met with in medical literature.

The Retrospect of Medicine. Edited by W. BRAITHWAITE, M.D., and JAMES BRAITHWAITE, M.D., Lond. Volume LXXIII. January-June, 1876. London: Simpkin, Marshall, & Co. 1876. 8vo, pp. 432.

IN these days of Periscopes, Quarterly Reports on the Progress of Medicine, Medical Records, *et hoc genus omne*, a year-book has a hard struggle for existence, and even a half-yearly volume like that now under review must prove its *raison d'être* by the possession of special merit. We are pleased, therefore, to find that this, the seventy-third volume of "Braithwaite's Retrospect," fully maintains the high character which the periodical has always enjoyed as a truthful chronicle of medical and surgical progress. The present volume includes 113 articles—many of which are far more than abstracts—on the various branches of medical science.

RECENT WORKS ON SURGERY.

A Treatise on Surgery, its Principles and Practice. By T. HOLMES, M.A. Pp. 928. London: Smith, Elder, & Co., 15, Waterloo-place.

Lectures on Surgery. By JAMES SPENCE, F.R.S.E.; Surgeon to the Queen in Scotland. Second Edition. 2 Vols., pp. 1,152. Edinburgh: Adam & Charles Black.

THESE works come to us from very distinguished men, representing two of the Schools of Surgery in Great Britain. They are both already well known as writers, and as highly educated and skilful surgeons; and these volumes, to a large degree, justify the reputation their authors have earned in the profession.

Mr. Holmes has edited a System of Surgery, which is a standard of reference in all well-selected libraries. But as that work is beyond the reach of most students, because of its cost, and to a certain degree useless, because of its bulk, he has issued the

present treatise, as an introduction to the larger system, freely availing himself of its contents. In point of literary structure, we have no words but those of praise to write concerning Mr. Holmes's book. His diction is always graceful and clear, and he usually works with great conscientiousness. There is much independence of thought, and a healthy disposition to resist the tendency to walk in old tracks, simply because they are old. But we do not think that the work is so superior to others of the same class already in existence to carry it into the foremost place as a text-book for students. To us the form of it is awkward and unwieldy, and after all there is something in the proportions of a book to render the reading of it irksome, in spite of pretty sentences and neat typography. In the text there is a very fair representation of modern views upon all subjects in surgery, but nothing that calls for special observation from its novelty.

In looking through the pages of Mr. Holmes's book, we examined with some interest his chapter on Aneurism. The treatment of this affection is of such great interest that we expected to find some allusion to the part which the Dublin School of Surgery has played in that direction. The text-books which have preceded this do not neglect to give due prominence to the labours of the distinguished men who, in this city, developed the principle of treatment by compression. Mr. Holmes, however, is practically silent; Carte's name is mentioned in the most incidental way; his compressors are not even thought worthy of being figured, while to others who have earned distinction in this department of surgery there is no reference whatever. Mr. Holmes cannot plead ignorance of what has been done in this country in investigating the subject, and it would have been at least graceful had he given us some credit. The circumstance is probably sufficiently well known not to suffer by an omission of this kind; but we must, nevertheless, regard it as a defect in a treatise which the author intends "shall not be unworthy to rank with the other excellent text-books in use in our schools."

We must not forget to mention an excellent chapter upon "Diseases and Injuries of the Eye," by Mr. R. Brudenell Carter, who has here brought together all the information which will give the student a fair introductory knowledge of affections of this organ.

Some of the engravings might very well be improved. We hope that in the next edition Mr. Holmes will have the faulty ones

replaced by others, and any other defects which may be discovered made good. We do not expect to see a perfect text-book, and the author of this has not reached further forwards than many who have undertaken the task. But, on the whole, he has done his work in a manner for which it would be ungenerous not to give him very high credit indeed.

MR. SPENCE'S work consists of the Lectures which he has been in the habit of delivering to the students attending the University of Edinburgh. They are written in the free style which befits discourses intended for a number of young men of different mental capacities, and are not mere dry essays, composed of rigidly technical phraseology. The popularity of the work is well indicated by the fact that it has passed into a second edition in its fourth year. The author has added much to this reprint, and has brought it up to the present time in most of the important improvements which have been made in surgery. The Lectures are illustrated by detailed cases, with full clinical records from day to day—a plan which there is reason to fear is becoming rather unfashionable. The daily history of a case, and its treatment by an able surgeon like Mr. Spence, is invaluable to many a practitioner who is beyond the reach of consulting with any medical man, and who is often timid about the application of the general principles he has brought with him from the schools, to the particular case he may have in hand. Under the title of clinical cases, illustrating the subject of amputation, we have the notes of no less than five successful removals of the lower limb at the hip-joint, one of them being primary, the rest for disease. This is a very enviable series of results.

There are many good engravings and some plain lithographs. The coloured plates, however, are roughly done, are not true to nature, and ought to be expunged from any future editions. The work is an extremely practical and useful one; and embodying, as it does, the experience of a surgeon who has had exceptional opportunities for observation, we are sure it will prove very welcome to the class for whose instruction it is so well suited.

A Course of Operative Surgery. By CHRISTOPHER HEATH, F.R.C.S.; Surgeon to University College Hospital, &c. Parts I. & II. London: J. & A. Churchill, New Burlington-street.

MR. HEATH has, for twenty years, been a teacher of operative surgery on the dead subject; and, having ceased to act in that

capacity, he is about to embody in this work the experience he has gained during that time. The operations have been carefully done by the author, and sketched with great fidelity by the well-known anatomical artist, M. J. B. Lévillé, of Paris. The colouring is extremely good. The dissections in connexion with the ligature of arteries will be found excellent aids to the surgeon who has been for some time absent from the dissecting room. The text is sufficiently full; and, altogether, the work will, we are sure, be a very beautiful and trustworthy chart of operative surgery.

A Manual of Clinical Medicine and Physical Diagnosis. By THOMAS HAWKES TANNER, M.D. Third Edition. Revised by TILBURY FOX, M.D. London: Henry Renshaw. 1876. Pp. 323.

WHATEVER opinion may be held as to the value, or otherwise, of the necessarily superficial information derived from the majority of students' manuals, the fact of the popularity of many such books among the class for whom they are intended is significant. Dr. Tanner's manual has always been a favourite one with English medical students. As a proof of this it is now in its third edition; Dr. Tilbury Fox, who edited the second edition, having again performed the same duty, evidently with great care, for the present one.

For the information of those who have not seen former editions of this work, we may mention that its aim is to present the student with the main features and diagnostic marks of the more important diseases; to furnish him with a description of the modes of physical examination, and explain to him the significance and various causes of the results thereby ascertained. It is needless to dwell on the truism that such knowledge can only be practically attained at the bedside of the patient. It is as a guide and aid to the student in his study of *clinical* medicine that this manual will alone be found of service; and used in this way, as intended by its author and editor, we can safely recommend it.

One of the most useful chapters in the book is on the chemical analysis of the blood and secretions. The section on the urine contains a full account of the modes of making the quantitative determination of urea and of sugar in that fluid. We notice, however, that no description is given of Pettenkofer's test for bile.

Leçons Cliniques sur les Maladies Mentales. Par le DOCTEUR AUGUSTE VOISIN, Medecin de la Salpêtrière. Paris: J. B. Baillière et Fils. 1876. Pp. 193.

THE present work, consisting of a *resumé* of the different courses of clinical lectures delivered at the Salpêtrière Asylum, Paris, since 1867, by M. Voisin, whose name is already well known from his various contributions to the study of the diseases of the nervous system, will be read with interest, though it is probable that many of the views contained therein may not meet with general acceptance. M. Voisin devotes these lectures to the consideration of the various forms of mental derangement, on the basis of the changes occurring in the brain cells; and, while it is as yet a question whether, with our present knowledge, we can study insanity solely from this point of view, there can be no doubt that our work for the future must have for its object the endeavour to discover the relations which the various and complicated mental phenomena bear to the structural alterations which have now been so abundantly demonstrated to exist. M. Voisin sets out by discarding all classifications founded solely either on symptomatology (Esquirol, Pinel) or etiology (Moreau), and impresses his auditors with the view that a rational classification should be based on an *ensemble* of the etiology, pathogeny, clinical history, and pathological anatomy—a system somewhat similar in design to that enunciated by Dr. Bucknill in *The Lancet* for November 15th, 1873; and he adds that he is the more convinced that this should for the future be the basis of our study of insanity, as he is unaware of having ever made an autopsy on an insane person without having found lesions either appreciable to the naked eye or demonstrable only by the microscope; the employment of which he considers indispensable to the correct knowledge of such lesions. The latter portion of the first lecture is occupied with a description of the morbid histological conditions, which he summarises as follows:—

1°. Lesions of the capillaries, apoplexies, and exudations of hæmatosin and hæmatin into the lymphatic sheaths, dilatations of the capillaries, infarcts, atheroma.

2°. Anæmia of the capillaries, diminution of the normal quantity of phosphorus in the cerebral substance.

3°. Alterations in the ganglion cells, presenting several degrees; the first lesion and that most commonly found being an infiltration of pigment and fat into the protoplasm, which at first leaves the

nucleus and nucleolus intact, though obscuring them; as the change advances, the pigment and fat disappear, and the outline of the corpuscle shrinks and approaches the nucleus which it may touch; finally, in the most advanced stage no trace of the protoplasm remains. In the intermediate degrees of these lesions it is not uncommon to find the process of the corpuscle bent up and destitute of myeline, and even to meet with the axis cylinder broken across. When the protoplasm no longer exists, the nucleus becomes deformed in its turn, and takes on an angular appearance; and the nucleolus which has resisted longer also disappears, and the nucleus only remains of a triangular form, and to which is sometimes attached a remnant of the axis cylinder. In the fifth lecture (in which a new series is commenced) these lesions and their great practical importance are again alluded to, and a somewhat fuller description of the alterations in the brain cells is given; while in the intervening chapters, mental alienation arising from active and passive congestive processes in the cerebral circulation—from simple anæmia—from arterial atheroma—and that consecutive to intracranial tumours are treated of, and a description is given of a peculiar form of spinal meningitis located in the posterior half of the cord, coming on insidiously either prior to or during the course of general paralysis, the symptoms of which may be confounded with bilateral sciatica. The author mentions several cases of the affection, and records the anatomical characters of the disease.

In the succeeding chapters, insanity from stenosis of the cerebral vessels, with spasm of the organs of vegetative and animal life, are discussed, and the characters of sensorial madness portrayed—the author showing, by the histories of several cases, the power of disease or hyperæsthesia of the organs of special sense to induce illusions or hallucinations, and points out, from the results obtained by Galezowsky and others, the possibility of illusions or hallucinations of vision being cured by an operation on the eye. The hallucinations from these purely physical causes may be distinguished from those psycho-sensorial ones common to other forms of insanity, by the fact that, when of sight, the former disappear when the eyes are bandaged, or when total blindness ensues; or of hearing, when the ears are stopped—and this appears to be a valuable guide for treatment. A short lecture on insanity occurring with hyperæsthesia of the cerebro-spinal system and the great sympathetic follows, and sympathetic insanity and the structural alterations which he has found in the semilunar ganglia are next treated of.

In two patients suffering from hypochondria and melancholia, in whom organic disease of the abdominal organs was found *post mortem*, the microscope showed in the semilunar ganglia, which appeared healthy to the naked eye, a great number of embryoplastic nuclei, with fusiform bodies and a newly-formed lamellar structure. The nerve cells were diminished in number, those which remained being either healthy or atrophied, or filled with pigmentary and fatty granules, the nucleus being visible in some, while in others it had disappeared. In the remaining lectures, the mental derangements incident to youth, and the various forms which resulted from the siege of Paris and the Commune, together with "tubercular insanity," are described, and the consideration of the mental states in acute and chronic alcoholism, with a physiologico-pathological study on the troubles of speech in general paralysis, an outline of which appeared in *The British Medical Journal*, June 19th, 1875, concludes the work.

The volume is illustrated with several chromo-lithographic plates, representing the morbid conditions described in the text. These drawings are somewhat fragmentary, and wanting in detail; they are too closely crowded on the pages, and do not, for the most part, adequately represent the changes which they are meant to portray. The matter in these lectures is pleasantly dealt with, and the descriptions are clear and to the point, and are illustrated with numerous carefully recorded observations, tending to show the dependence of mental alienation on physical brain lesions. This throughout has been the author's avowed object, in which we believe he is fully warranted by the results which are now accruing from careful and minute *post mortem* research, when looked at by the light of our daily increasing knowledge of physiology and histology; and, as a treatise solely devoted to the study of insanity from an anatomico-physiological point of view, we welcome M. Voisin's book heartily, and believe that it will prove a valuable contribution to the literature of this branch of medical science.

Public Health. By the late E. A. PARKES, M.D., F.R.S. Revised by WM. AITKEN, M.D., F.R.S. London: J. & A. Churchill. 1876. 8vo, pp. 80.

THIS "short but comprehensive treatise," as Dr. Aitken aptly terms it, is the most admirable work of the kind we have ever read. It not only gives an outline of the questions embraced by

the sanitary legislation of the country, but also suggests the scope of future enactments, and supplies useful and practical information to Medical Officers of Health.

In the Preface Dr. Aitken observes:—

“At the close of a life so active and so useful as that of Dr. Parkes was known to be, this little book—his last work—cannot fail to be not only of great interest, but of great value—of great interest, as the last parting words of one whose life was devoted to the public good—of great value, as giving form and expression to the results of a prolonged, varied, and matured experience regarding the numerous and very difficult subjects which demand grave consideration in the details necessary for preserving and improving Public Health.”

Of the 80 pages included in the treatise, 50 are devoted to the “Conditions of Habitations.” This all-important subject is considered under the following heads:—I. Cities and Towns; *i.e.*, Populations over 2,000 Persons. II. Villages; *i.e.*, Populations of or under 2,000 Persons. III. Houses.

In a work on “Public Health” the topic of Alcohol and Alcoholism naturally finds a place. And it is refreshing, amid all the confusion into which the noisy clamour and excited argument of friend and foe have plunged the question, to read such calm, convincing words as these:—

“There is one article the use of which gives rise, directly and indirectly, to a large amount of sickness, and the trade in which certainly requires regulation if the public health is to be regarded. I refer, of course, to the sale of alcohol in its various forms. Owing to peculiar social customs, and to the insufficient recognition of the immense amount of harm produced by excess of alcohol, and to a want of definition of what is excess, the laws of this country have not only legalised the sale of a dangerous article of diet, but have actually encouraged the sale, until an evil so gigantic has been produced that no one can suggest a reasonable remedy. Yet the sale of alcohol is so distinctly a source of disease that it must be considered by those who have charge of the public health, and in some way must be restricted. One source of legislative error seems to be that alcohol is regarded by the State not only as a source of revenue, but as an indispensable article of refreshment. There is, of course, no question that the public must be supplied with houses where they can obtain proper refreshments, such as meat, bread, vegetables, milk, coffee, tea, or other articles of the kind; and public-houses were intended to supply articles of this description, as well as alcoholic liquids, which enter into the ordinary diet of most people; yet, unfortunately, a

system has grown up by which our public-houses have become only places where alcoholic liquors are sold, and this is defended on the ground that such liquors are refreshments. The amount of temptation which has been put in the way of our working classes by the heedless multiplication of these grog shops during the last forty years accounts for much of the drunkenness which so deeply affects our national life, and injures the health of the people. A remedy ought to be and must be found for this state of things, or else sanitary legislation will still present the absurd spectacle of raising up with one hand what it is smiting down with the other" (page 39, *et seq.*).

Dr. Parkes does not agree with the local sanitary authority of Dublin as to the disinfectant and deodorant properties of road scrapings. Some time ago the Public Health Committee of the Corporation of Dublin granted permission to certain persons to carry out their trade of manufacturing manure in some of the most populous parts of the city provided they disinfected and deodorised the manure by mixing it with ashes or *road-scrapings*! Of this novel method of disinfection and deodorisation our author writes:—

"The sanitary importance of thorough surface cleansing is obvious; the mud and dirt of towns and refuse of all kinds, wetted by rain and exposed to heat, soon decompose and give out effluvia which must be injurious to health, especially in narrow courts and lanes where the movement of air is impeded" (page 81).

In a section on "Vital Statistics"—one of the most interesting in the book—the significance and causes of a high rate of mortality among children is clearly shown. With these eloquent words this section and the treatise end:—

"By means of vital statistics, then, the causes of death among a people are determined, and by the rules of public health are attempted to be neutralised and overcome. The struggle is never-ending, but is not indecisive. It is remarkable how steadily public health has improved with each new advance in wise legislation. In no case has disappointment resulted; and in some instances the good results have been really surprising. Much still remains to be done, and hundreds of problems wait for solution; but the rapid progress of late years makes us confident that greater effects still will flow, as the knowledge of the causes of disease becomes more precise, and the technical means of prevention are more perfectly applied."

We should not forget to mention the "Appendix," in which are contained Hints as to Experiments on Diet and Body-temperature

in the Polar regions. The counterpart of this Appendix, in Dr. Parkes's own handwriting, was communicated by Dr. Macdonald, Professor of Naval Hygiene, to Drs. Colan and Moss before the departure of the *Alert* and *Discovery* in May, 1875.

The Nurse's Companion: a Manual of General and Monthly Nursing.

By CHARLES J. CULLINGWORTH, Surgeon to St. Mary's Hospital, Manchester. London: J. & A. Churchill. 1876. Pp. 134.

WE have read this little book carefully, and have formed a very high estimate of its merits. Its eminently clear and simple style adapts it to the comprehension of every member of that most useful class of the community for whom especially it is written—the nurses of the sick and of parturient women. No physician or surgeon in practice will hesitate to endorse the author's words, that “a properly educated and intelligent nurse is as important to the welfare of a patient as a skilful medical adviser.” Mr. Cullingworth, in writing his manual, has conferred a boon on the medical practitioners, the nurses, and the invalids of the country. Nor should we omit to mention that the moderate cost of the book—two shillings and sixpence—brings it within the reach even of those whose means are very scanty.

The Harveian Oration of 1876. By the late E. A. PARKES, M.D., F.R.C.P., F.R.S. London: J. & A. Churchill. 1876. Pp. 32.

A MELANCHOLY interest attaches to this, the last literary effort of the accomplished, amiable, and beloved Edmund A. Parkes. As our readers are, no doubt, aware, it was read before the President and Fellows of the Royal College of Physicians of England on June 26, 1876, by Dr. Parkes's friend and fellow-labourer in the cause of humanity—Sir William Jenner, Bart., M.D., F.R.C.P.

A Handbook of Therapeutics. By SYDNEY RINGER, M.D. Fifth Edition. London: H. K. Lewis. 1876. 8vo, pp. 597.

ONLY a year and a half has elapsed since we noticed the fourth edition of Dr. Ringer's Handbook. The work would appear to have lost none of its popularity, seeing that a new edition has been called for within two years.

We do not entertain a very high opinion of the present issue as compared with the former editions; and we must say that the value of the different articles is most unequal. Thus Dr. Ringer sums up all he has to say of hydrocyanic acid and cyanide of potassium in a page and one-third. No mention is made of the use of the acid in the cough of chronic phthisis; and all that is stated of its powerfully sedative action in gastric irritability is that "*it may also check vomiting.*" Again, "*Jaborandi*" and "*Bromal*" are only named (on page 468). On the other hand, much space is devoted—and properly so—to digitalis, nitrite of amyl, &c. As an example of really valuable information contained in the Handbook, the article on the Sulphides may be cited. In it the author fully describes the good therapeutical effects of calcium sulphide in the case of scrofulous glands in children.

But Dr. Ringer is scarcely justified in departing from the established custom of giving a "Table of Contents" as a clue to the scope and framework of a book. In the present instance the almost chaotic state of the subject-matter largely detracts from the merits of the work. With a few exceptions there is literally no system observed from beginning to end. Finally, it is with regret that we are again obliged to call attention to the very careless orthography both of the text and of the Indexes. "*Mucus membrane,*" "*felix mas*" (page 597), "*filis mas,*" (page 561), "*ichthyosis,*" "*megraine,*" "*nitrate* of amyl" (page 591), "*pomgranate,*" are not creditable errors in what is admittedly a standard work.

THE CREPITANT RÂLE.

DR. WORKMAN sums up an able article on the nature and conditions of production of this important auscultatory sign as follows:—The crepitant râle has its seat in the alveoli and infundibula, and possibly also in the ultimate bronchioles, the walls of which have the same structure as those of the air-vesicles. It does not occur in the diseased parts, but in those immediately around remaining nearly or quite healthy. Its origin is purely physical, and is due—first, to compression from without, and, secondly, to expansion from within. The compression is produced by adjacent indurations resulting from disease. It makes no difference what the pathological process may be, provided an induration be formed in or at the surface of the lung in such a manner as to give rise to the two above-named conditions in a spot favourable to perception by the ear. Hence the crepitant râle is peculiar to no one disease, as was formerly supposed, but may exist in several, each having its distinct pathological nature.—*Bost. Med. and Surg. Jour.*, Aug. 3.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

THIRTY-EIGHTH ANNUAL SESSION.

Saturday, June 10th, 1876.

LOMBE ATTHILL, M.D., President, in the Chair.

Sequel to Case of Pelvic Narrowing and Induction of Premature Labour, and Version by the Combined Methods; Spontaneous Dilatation and Labour at the Seventh Month of Pregnancy. By JOHN A. BYRNE, M.B., A.B., Univ. Dublin; Member of the Royal Irish Academy, &c., &c.

At a previous meeting of the Society I brought before its notice a case in which version by the bi-polar combined method of turning was employed, at the end of the seventh month of utero-gestation, according to the plan recommended by Dr. Braxton Hicks and Dr. Barnes. In that communication I took the occasion to dwell upon the merits of this method, and the advantages likely to result from the induction of premature labour at an early period, and the extraction of the child by the feet, instead of permitting the foetus to attain to its full maturity, in certain cases, where the history of the previous labours and careful examination assure us of the fact that the pelvic diameters are so contracted as not to permit a living child to pass through the pelvic brim at the termination of the ninth month. On that occasion my communication gave rise to a most interesting and practical discussion upon some of the *questiones vexatae* connected with the proper mode of treatment to be adopted in those cases where we are certain that the conjugate pelvic diameter is less than three inches.

With the permission of the Society I will now, as shortly as possible, detail the history of a subsequent pregnancy and delivery of the same patient.

Mrs. L. called on me upon the evening of December 2, 1875, and told

me that she had last menstruated on May 12, and that she thought she was about seven months pregnant; her appearance justified this supposition. She also stated that she had been troubled with slight pains during the day, which caused her uneasiness, and induced her come to see me. I proceeded to make a vaginal examination, and, to my astonishment, I found that the os uteri was fully dilated, and a large bag of membranes protruded through the pelvic brim. I told her that she should hurry home and that I would follow her, as she would be confined without delay, and to send for her nursetender. She appeared astonished at this announcement, as she did not believe that it was possible her confinement was approaching, so little uneasiness had she experienced from the pains.

When I reached her home I found her and her friends and nurse sitting at the fire-side chatting, and on my telling her that it would be necessary to proceed instantly to delivery, she would not permit me, being fully convinced that I had made a mistake. I left her, being in attendance on a lady in her first confinement, and I told her that she might send for some other medical man.

About 1 a.m. her mother called to the house and implored of me to come, as the labour had come on very rapidly, and as the child was half born, but the nurse who was in attendance was unable to complete the delivery. I drove there as rapidly as possible, and on my entrance I saw the state of things at a glance; the feet and legs and breech of a small child were protruding through the vulva; the funis was without pulsation, and the feet, when pricked by a pin, showed no signs of the foetus being alive. However, I proceeded to deliver, and after a short time I extracted a male child. It was apparently dead, but after a very long time spent in resuscitation it came to, and breathed, and I had the satisfaction of seeing it live. As well as I could judge from the account given to me, and from the time occupied in coming for me and my reaching the house, at least twenty minutes must have elapsed from the time that the membranes burst and the foetus descended; the woman in attendance had endeavoured to extract the child but had failed, so that some violence must have been done to the foetus, and as I have said before, it was to all appearance dead when I reached the house and delivered it. Now, this fact is important to remember, and should teach us that in all cases we should endeavour to restore animation, even when the funis is pulseless, and the infant to all appearance dead. It is probable that if the child had been fully developed it might not have been resuscitated, as the pressure on the body and funis would have been much greater during its passage than in such a case as this, where the foetus was immature.

The bi-parietal diameter of the head measured 2½ in.; fronto-mental, 4 in. The child lived for six weeks, and died from bronchitis. I

think that had the infant been properly managed according to my directions it would have lived, but the fact of its having lived so long proves that it survived the effects of the operative procedure which was necessary to bring it into the world. The patient recovered, and was well at the usual period. It is a curious circumstance connected with the history of this case that labour should have come on spontaneously at the same period of pregnancy almost as when it was induced on the previous pregnancy. Reckoning from the cessation of the last menstruation to the day of delivery, she was 205 days pregnant. Now this, although short of the seven months, makes a very close approximation to it. I inquired particularly had any circumstance occurred to induce early labour, but nothing unusual had taken place, so that I suppose we can only explain this remarkable and interesting phenomenon in this way, that the uterus, having been induced on the previous pregnancy, by artificial means, to expel its contents, was unable to retain them longer on the subsequent pregnancy, and that a spontaneous action of the uterine muscle took place, by which labour was brought on; it somewhat resembles what takes place in those pregnancies attended by early abortion in which, without any disease or known cause, abortion is brought on at periodical intervals by spontaneous uterine action in successive pregnancies.

In the discussion which followed my first account of this case, a great deal of information was elicited from the gentlemen who took part in it, and most of the members, no doubt, looked upon it as a very important case, particularly my friends, Dr. Kidd and Dr. T. M. Madden, who had been to assist me at each delivery, and who had, for that reason, an opportunity of judging of the diminished size of the pelvis; they both agreed with me that the size of the conjugate diameter was less than three inches, and, as we see, the forceps had been tried in the first delivery, but unsuccessfully. The bi-parietal diameter of the child's head was $2\frac{3}{4}$ inches, and the fronto-mental was 4 inches, so that I think we may, with reason, presume that no living child at the full period, with a bi-parietal diameter of four inches, could pass through a space so narrow, and also that, as far as we could judge from the size of the pelvis, that a foetus much larger than the one which was delivered could not by any possibility pass through. It becomes, then, a question of the greatest practical importance, what should be done in similar cases. In this case nature anticipated all operative interference, and spontaneous labour came just in the most suitable time, and at a period when there was not much difficulty for the foetal head to pass the narrowed conjugate. The result might, however, have been different though, even in this case, had the foetus presented with the vertex. I do not think that it is at all improbable that even with this head, one and one-quarter inches narrower in its presenting diameter than the standard head, we would have

had some difficulty had it been arrested at the brim, and that it might have been necessary to apply a long forceps, and perhaps without success; but, as I have said, the feet presented, as is often the case at this early period of pregnancy, and there was no trouble in extracting the head afterwards, or very little. Now, the particular line of treatment to be adopted in those cases, where we are certain from previous history that there is malformation, is a matter of the greatest importance. There is no doubt that if we permit the child to attain to full intra-uterine maturity, that a living child cannot pass through such a pelvis. Dr. Barnes, of London, lays down a table for our guidance which is tolerably clear at all events, and intelligible. At the full period of pregnancy he gives four measurements of the pelvis as indicating the lines of treatment to be used:—

| Degree | Conjugate Diameters | |
|--------|---------------------|------------------------------|
| 1 | 4 to 3½ inches | Forceps |
| 2 | 3½ to 3 „ | Version |
| 3 | 3½ to 1½ „ | {Craniotomy Cephalotripsy |
| 4 | Below 1½ | Cæsarean Section |

AT 7 MONTHS.

| Degree | Conjugate Diameters | |
|--------|---------------------|--------------------|
| 1 | 4 to 3½ | Spontaneous Labour |
| 2 | 3½ to 3 | Forceps |
| 3 | 3½ to 1½ | Version |
| 4 | Below 1½ | Craniotomy |

In my opinion those measurements of pelvic narrowing pretty accurately, and as far as is sufficient for practical purposes, represent the difficulties we meet with, and our chances of success in effecting delivery. Now as it should be the aim of all accoucheurs to adopt a conservative policy in practice, and to try, as far as possible, to do away with craniotomy, of which the results, even to the mother alone, are so fatal, without taking into account the positive slaughter of the infant—a custom which was so frequent in times past, but which, I am rejoiced to say, is now being regarded with a certain amount of horror, and for which practice all are endeavouring to seek some operative substitute. It appears to me that in those cases where we are certain that the measurement of the conjugate diameter is less than three inches, the practice should be to induce premature labour and perform version, rather than wait for the full period of pregnancy to be accomplished.

The recital of this case will not, I hope, be deemed by the Society

unimportant, inasmuch as it is a contribution to the list of those successful cases of version which have prevented the horrible alternative of craniotomy or cephalotripsy.

DR. DENHAM.—I have no hesitation in saying that the induction of labour at seven months is often a most excellent practice, and one that should not be lost sight of. On several occasions I have been successful in inducing labour at seven months. I remember, a few years ago, inducing labour, in the case of a woman whom we were afterwards obliged to deliver with perforator and crotchet. In another case that I attended with my old and esteemed friend, the late Dr. M'Keever, we delivered the woman with a forceps, but the child died. On three occasions, when the os was fully dilated, I passed up my hand, ruptured the membrane, and turned successfully. In a fourth case, I was so much impressed with the importance of saving the life of the child, that I induced labour in the seventh month successfully. I knew another case in which the patient, a lady, came up from the country for her confinement on three separate occasions at the seventh month—all successful. In all the cases I have mentioned the mothers and children lived. I believe the chances are tenfold more in favour of the mother if the labour be induced at seven months than at a later period, for we all know how enormously children differ in size, and this is a most important consideration where you have the certainty of an under-sized pelvis.

TREATMENT OF DIPHTHERIA.

In January of this year, in a very desperate case of diphtheria, after permission for tracheotomy was refused, Dr. Tenholt (*Allgemein. Med. Central-Zeitung*, April 26, 1876, No. 34) tried a mixture of salicylic acid and lime-water (2:200). With this solution, which, by-the-by, was perfectly clear, the throat was painted, and at the same time a dessert-spoonful of the same with an equal amount of milk was given internally every hour or half hour. After a few hours a membranous mass was coughed up, the breathing became easier, the swallowing also, and in two to three days recovery was complete. Since, during an epidemic, without regard to what may be the chemical composition of this mixture, he has used it in the treatment of several cases. With older children it is used as a gargle; with smaller children, when obstacles to painting the throat are met with, it is given internally to be swallowed slowly. In the author's ten years of practice he has never been so successful with any other mode of treatment; for in a large number of severe cases treated in this way he lost but one, and this fatal case was that of a child to whom it was impossible to administer the remedy in any manner—*Bost. Med. and Surg. Jour.*, Aug. 3.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—HENRY KENNEDY, M.B., F.R.C.P.

Secretary—E. H. BENNETT, M.D.

True Aneurism of the Aorta.—DR. HAYDEN said: The morbid specimen which I have the honour of exhibiting to the Society is invested with interest in many respects. A man aged forty-six, a grocer's assistant, of very intemperate habits, was admitted into the Mater Misericordiae Hospital on the 11th of last January. He declared that he had never been seriously ill, and that he had been complaining only for a few days of bronchitis, accompanied with weakness. On examining him I found slight oedema of the face and the feet. His pulse was regular but rather weak, and equal in the two wrists. The heart's action was feeble. The pulsation of the apex was felt a little below and outside its normal position, and at the ensiform cartilage there was a double murmur, accompanied by a double sound. The first sound was feeble, but the second sound was remarkably sharp and ringing. Of the two murmurs which were audible, one, which was systolic, was diffused over the entire right front, and was likewise audible in the carotid arteries on both sides. The second, or diastolic murmur, was confined to the region of the xiphoid cartilage and a little above it. From the right nipple to the right clavicle there was absolute dulness, and in the same situation a total absence of respiratory sound; there was perceptible here a very feeble impulse. The diagnosis of aneurism was made. The man under ordinary treatment improved considerably, and left to resume his situation. He was re-admitted into the hospital on the 19th of February, in a very much worse condition than previously. There was then extensive oedema of the face and the lower extremities; the pulse was distinct, and 84 in a minute; the cardiac impulse was scarcely perceptible in the normal position; the superficial precordial dulness was entirely abolished; and in the situation where dulness previously existed on the right side, there was now palpable and visible pulsation; from the right nipple to the clavicle there was still absolute dulness; respiration was inaudible in the same situations, and to a like extent, and here a very strong heaving impulse existed, whilst two murmurs were audible as before, both now, however, of a blowing character. The diastolic murmur was remarkably loud, and propagated downwards towards the ensiform cartilage with great distinctness; its maximum point of intensity being in the third intercostal space on the right side. From this point towards the ensiform

cartilage, and the area of the aortic orifice, the murmur was distinctly traceable, but not towards the apex of the heart. The man's condition underwent a very slight improvement. Towards the end of February he began to spit blood, and he died on the 4th of March. The heart is, as may be observed, remarkably large. There is dilatation with hypertrophy of the left ventricle, which was much thickened at all points except at the apex, where, as usual in such cases, it was thin. The right ventricle is slightly dilated and very slightly thickened. The aorta is enormously enlarged. A clenched hand can be turned round with facility in the ascending portion of the vessel. The enlargement is equal as regards the circumference of the vessel, except in front and to the outer side, where there is a very slight derangement of symmetry by expansion. This was the point, no doubt, that came into contact with that portion of the chest above the right nipple, about two inches in diameter, where a very strong heaving pulsation was felt on the occasion of his second admittance into hospital. The vessel is in a remarkable state of atheromatous change, patchy and mottled yellow and red, and also fissured in several places; but there is no separation of the tunics anywhere. The arteria innominata is dilated, and in a similar state of atheromatous change. The dilatation extends downwards as far as the lower portion of the arch; at the commencement of the thoracic aorta there is a rather abrupt cessation of expansion of the vessel. From that point downwards it presents normal dimensions, but the atheromatous change is even exaggerated here; it is more advanced than in the arch, where the vessel is dilated. In several situations there are calcareous scales. In no portion of the aorta is there a breach of the coats except the fissuring already mentioned as existing in the dilated portion of the vessel. The coronary arteries are pervious; a bristle may be readily passed through them; the coats of the anterior artery are in a normal condition, but those of the posterior vessel are not in a healthy condition; they are somewhat rigid. The lungs presented a condition which I was prepared to find—viz., several patches of hæmorrhagic infarction. At the base of the right lung are two or three of those patches, and the middle lobe of the right lung presents a good example of the same condition. The heart is, on the whole, greatly enlarged, but structurally sound. This case is one of great interest in many respects. First, it affords an example of true aneurism—a form of that disease denied by Scarpa. This doctrine has been long since exploded. The case before the Society, even taken alone, would be sufficient to disprove it. In this case all the signs of aneurism existed—namely, impulse, localised murmur, and a second centre of impulse and of murmur. It is an example of true aneurism characterised by the ordinary signs of that disease. It is further of interest as illustrating the fallacy of the doctrine recently promulgated, especially in London—namely, that atheromatous change in the aorta is *always*

the consequence of excessive vascular tension. Here is a case in which the entire aorta is in a state of atheromatous change, but the lower portion of the vessel, which is not dilated, is in the most advanced state of atheromatous change. There can be no doubt that the atheromatous disease here was the direct product of slow alcoholic poisoning. The man had been in a position which enabled him to indulge his propensity, and was a habitual tippler. That was the cause, no doubt, of the atheromatous change, and consequent upon it was the hypertrophy of the left ventricle, which gave rise to the dilatation of the diseased portion of the vessel most exposed to its influence—namely, the ascending portion of the arch. Consecutive to this was the change in the valves, which became inadequate by changes in the aorta. You observe that the aortic valves are structurally sound and flexible, but incompetent. This incompetency was due not so much to dilatation of the aortic orifice—which you observe is barely larger than the normal dimension—as to puckering up of the investing membrane of the valves, which was itself due to dilatation of the aorta immediately above. A portion of the vessel, where it expanded most, drew up the corresponding valve, which was thereby foreshortened and rendered inadequate. The liver is in an early stage of cirrhotic change, small and remarkably rigid. The kidneys are in a similar condition. The spleen is not enlarged. The history of the case is one of manifest alcoholic poisoning, followed by the serious structural changes I have mentioned.—*March 11, 1876.*

Gastric Ulcers and Perforating Ulcer of Duodenum after a Burn.—MR. STOKES: This specimen was taken from a patient aged eighteen years, who was admitted into the Richmond Hospital under my care on the 28th of last month suffering from the effects of a very severe burn. His friends informed my clinical clerk, Mr. Ryan, that he was subject to epileptic fits, and that in one of them he fell forward into the fire and sustained the injury for which he came to the hospital for treatment. His face was very extensively burned, and also his neck, and almost the entire front of the thorax, the upper portion of the abdomen, and also the right arm, the degree being the fourth of Dupuytren or the third of Hebra. When admitted into the hospital he was suffering from great collapse, from which, however, he rallied. He went on from that until the day previous to his death extremely well. There was no evidence during the entire time of his stay in the hospital that there was any internal mischief at all. He took his food well and was cheerful, and, on the whole, we formed a not altogether unfavourable opinion as to the chance of his ultimately getting over the effects of the injury, with, however, of course, the result of great deformity should he live. However, on the seventeenth day after his admission he had a severe attack of hæmatemesis, but there was no evidence of peritonitis whatever. Shortly

after that he became collapsed, and died on the morning of the eighteenth day. On examining him we found very extensive ulceration, involving not merely the duodenum, but also the stomach. There was a very large oval and clearly-defined gastric ulcer at a considerable distance from the pylorus; at the junction of the stomach and the duodenum there were two small ulcers; and further on a large oval perforating ulcer in the duodenum. There were also two smaller duodenal ulcers, which, however, were not perforations. Only one specimen similar to this has been exhibited to the Society, and it was by the late Professor Smith, in 1858; the "Proceedings of the London Pathological Society" also only show two examples of a similar kind. The perforation, therefore, is one of considerable rarity, and makes this case one of great interest. Another feature of interest is the existence of gastric ulcers, which I have never seen before in cases of this sort. Examples of it may occur in the literature of the subject, but I am not aware of them. Another peculiarity of the case was the absence of all peritonitis. This was also a characteristic of the case exhibited by Professor Smith. In his case three ulcers perforated all the tunics of the intestine. In this case no blood was found in the intestine, and there was no evidence of peritoneal inflammation. The three things rendering the case one worthy of exhibition were—first, the existence of gastric ulcers; secondly, the large perforating ulcer in the duodenum; and thirdly, the absence of all peritoneal inflammation. The patient became collapsed immediately after the vomiting of blood on the evening of the seventeenth day, and, as I have mentioned, died on the morning of the eighteenth day.—*March 25, 1876.*

Complicated Disease of the Lungs.—DR. FOOT exhibited the lungs of a young man, aged twenty-five, whose death had been accelerated by complications arising within the abdominal cavity. These complications were a combination of fatty and lardaceous infiltration of the liver, and lardaceous infiltration of the intestines. The lungs presented the pathological characters of chronic phthisis. His death had been accelerated by the left lobe of the greatly-enlarged liver pressing the spleen so forcibly against the left hypochondrium as to cause a perisplenitis, evidenced by a loud local friction over the splenic region and a grating rub perceptible to the patient. The convex border of the spleen was found coated with exudation fibrine, which was confined to this region of the peritoneum; this local peritonitis was accompanied with severe, continued, and exhausting pain—which was only temporarily relieved by injections (hypodermic) of morphia—and by such tenderness that he could not bear even light poultices. Before the development of the peritonitis there had been local "numbness" in the splenic region from pressure of the organ on the lower intercostal nerves, a troublesome

itching, and a circumscribed œdema in the same locality. These symptoms were attended with frequent rigors, and with a sensation of such distress in the left hypochondrium that, as he had been in India, and had frequently had intermitting fever, Dr. Foot had often suspected the existence of splenic abscess. On one occasion the patient begged that an incision might be made in his left side, and a very careful examination having been then made with a view to the propriety of exploring the spleen, the conclusion was arrived at that the spleen itself was not materially enlarged, and at the same time, from the muffled resonance yielded by the spleen, it was inferred that there was a greatly distended stomach to its inner side. The existence of friction furthermore prevented Dr. Foot from yielding to the patient's wishes and puncturing the side, but the passage of a flexible catheter into the stomach, repeated several times, gave great and immediate relief, by affording an exit to quantities of gas which had accumulated in the stomach, and which, by adding its pressure to that of the left lobe of the liver, had greatly enhanced his sufferings. The other event which contributed to shorten his life was profuse serous diarrhœa, arising from extensive lardaceous^d infiltration in the intestinal arteries. The evacuations were often as numerous as twelve or fourteen in the twenty-four hours, and were frequently described as consisting of "pure water." Neither suppositories, injections, or any form of astringent medicine by the mouth materially modified or controlled this serous flux. He had been laid up in India for four months with dysentery, attributed to water he had drunk on a march in Peshawur; and bearing in mind the fact that dysenteric ulcers are liable to break out afresh, the stools were often examined, but they did not, in colour, smell, or composition, resemble those observed in that disease. On *post mortem* examination the whole intestinal tract was found free from any glandular disease; the glandular apparatus was even less conspicuous than is usual in health, but the mucous membrane of the colon, as laid before the Society, was greatly thickened and corrugated in wrinkled elevations, which were thickly stippled with gray markings arranged transversely to the rugæ. Portions of the ileum and colon were submersed in a weak aqueous solution of iodine and iodide of potassium—a dilute solution of the liquor iodi B. P.—and demonstrated the lardaceous infiltration of the minute arteries in a very perfect manner. The deep mahogany or walnut-coloured rugæ of the colon gave it the appearance of a much-burned pancake; the infiltration was much less marked in the small intestine, but predominated, as is usual, about the Peyerian patches. The very much greater degree of lardaceous change which existed in the large intestine was remarkable, as it is generally the small intestine which is most affected. The case also corroborated the observation that the serous diarrhœa which is considered due to an increased permeability of the infiltrated walls of the

vessels, is greater in proportion to the implication of the mucous membrane of the colon. Beyond the great and irregular thickening of the inner coats of the large intestine, there were no evidences of the dysenteric attack which had occurred two years previously, but it is possible that this attack may have been connected with the greater development of the lardaceous change in the large intestine.

The liver was of great size, stretching from side to side of the body; in weight six pounds five ounces; it measured transversely eleven inches, and from thick to thin border eight inches and three-quarters; it was of a yellowish-brown colour, firm, smooth, and free from adhesions; brittle in fracture, waxy on section, and quickly throwing off water poured over the cut surface. It consisted of a mixture of fatty and lardaceous matter, the fat was in the proportion of 6.75 per cent.; an aqueous solution of iodine brought out the mahogany-brown coloration with great distinctness and permanency. Microscopic examination showed numerous hepatic cells to be converted into structureless homogeneous bodies, with the peculiar glistening appearance of amyloid infiltration, and also many liver cells in various degrees of fatty infiltration. From the shape, colour, and consistence of the liver, and from the chemical examination it would appear that the lardaceous infiltration predominated over the fatty, which latter was probably not more than would be accounted for by incomplete oxidation of the hydrocarbons, in consequence of the interference with the respiration. There was a complete absence of subcutaneous fat in the most emaciated body; the omental fat was entirely gone, while the appendices epiploicæ alone preserved almost their usual amount. It is a question how far his great capacity for cod-liver oil may have contributed to the lardaceous infiltration of the liver. Frerichs has seen cases of well-marked waxy liver developed during the continuous use of this remedy, and the patient in this case could take any quantity of it, but had been restricted for a long time to three ounces a day. The gall bladder was empty and contracted; there had neither been icterus nor ascites of the slightest amount. The spleen, though firm and responding to the iodine test, did not at all present the infiltration to the same degree as the liver; it weighed nine ounces, and measured six inches by three and a-half in breadth. The kidneys were fatty and large, but not lardaceous, weighing, the right five and a quarter ounces, the left seven and a half ounces. The urine had been albuminous, and on one occasion was found to contain .165 gramme of dried albumen in eight ounces. There never had been any cedema of the feet or face.

The affection of the lungs originated in a cold caught in India a year and nine months before his death, while he was enfeebled by a six months' attack of dysentery. He was invalided, sent home, discharged from the army, and came under my observation in the Meath Hospital

nine months after the commencement of this cold (10th March, 1875). At that date there were evidences of induration and contraction of the right lung, with displacement of the heart towards the right side, and compensatory enlargement of the opposite lung. He had got fresh cold six weeks previously; there were loud muco-crepitant râles all over the right front, and less pronounced ones over the left front, diminishing from the apex downwards. Rest in bed, poultices, and anti-pyretic treatment were followed by cessation of fever and sweating, and diminution of the muco-purulent expectoration to one-fourth its quantity. His strength and appetite improved, an amphoric sound on forced inspiration replaced a loud gurgling which had existed under the right clavicle, and in six weeks he was able to go to the country. Seven months afterwards he was readmitted to hospital, 15th November, 1875, having very lately had hæmoptysis for the first time. He had lost 19 lbs. in weight since last seen. The right side of the chest was, at the nipple, one inch, and at the xiphoid cartilage one inch and a half less than the left side. There was cavernous respiration under the right clavicles. The resonance of the left lung came over one inch to the right side of the sternum at the level of the second rib. The sputa, non-globular, sank in water, and he had begun to suffer from diarrhœa. 28th December, 1875, his respiratory capacity, taken with Casella's spirometer, averaged 47·5 cub. in., whereas it should have been 230 cub. in., as his height was five feet seven inches. The great impediment to the descent of the diaphragm offered by the enlarged liver may have added to the deficiency due to the condition of his lungs. Temporary improvement in the condition of the lungs and abatement of the diarrhœa enabled him to leave hospital again 29th January, 1876. He was admitted a third time, 14th February, 1876. He had again got fresh cold, but had gained 11 lbs. in weight, some of which was undoubtedly due to deposit in the liver, which had been steadily increasing in size since he first came under observation. The diarrhœa was now the prominent complication, the lung symptoms remaining in abeyance, and he sank gradually, becoming more and more emaciated till he died 21st March.

When the chest was opened the greater part of the right side of the heart was found to the right of the sternum. The right lung was universally adherent to the chest wall and diaphragm; the fibrous union, about its upper portion, had to be cut through, opening thereby tough-walled irregular cavities. The three lobes were amalgamated, the whole organ reduced to about one-third its size; on section it appeared to be principally made up of fibrous tissue, thickened bronchi, and tough walled cavities; the inter-lobar septa were marked by thick white bands traversing the mass; the bronchial glands were enlarged, and in parts deeply pigmented. The left lung had an old cavity in the summit of the upper lobe, and scattered through the other parts were nests of pseud-

tubercular granulations; it was adherent to the costal pleura at the apex only; it exceeded the right lung in size as three to one. The heart, empty of clots, weighed but five ounces, and was pale and flabby.—*March 25, 1876.*

Strangulated Femoral Hernia.—DR. BENNETT said: These are the structures which were involved in a case of strangulated femoral hernia, which presented exceptional characters. I operated on the patient in the course of last summer. My reason for exhibiting them to this Society is, that they present a complication which, although long since described in connexion with hernia, is still sufficiently rare to deserve attention. The patient was a middle-aged woman, of sound health and active habits. She had worn a truss for some considerable time. Two days before her admission into hospital, in consequence of a rather prolonged walk, she had suffered from symptoms of distress in the site of her old hernia, which was a femoral one. She came in from the country by car to Sir Patrick Dun's Hospital, recommended by Dr. Elliott, of Coolock. She walked with facility into the hall and along the passage to the ward, and at first sight one would have supposed that there was very little the matter with her. She, however, had a small femoral hernia which was hard and tender, and she suffered from pain radiating from it, with occasional vomiting. There was at that time no febrile reaction, and her symptoms, although sufficiently urgent in the tumour itself, were as yet, as far as their general character was concerned, quite undeveloped. She had hardly vomited more than once or twice before her admission. It was hard to determine exactly the condition of the bowels, for on the administration of an injection some amount of material came away; and it was doubtful whether the fæcal matter so removed was evidence of the emptying of the section of the intestines below the obstruction, or whether the obstruction was incomplete. Some flatus passed subsequently to emptying the intestine by injection, and I suspect that a large amount of the material passed by the obstruction. Considering that the symptoms were so slightly developed, we adjourned the consideration of an operation until the following morning, and in the meantime confined ourselves to the ordinary course of treatment, with a view to the reduction of the tumour, but without producing any effect on it. On the next morning, with the assistance of Professor M'Dowel, I operated.

• There was nothing exceptional in the superficial dissection of the tumour. Considering the condition of affairs, I had made up my mind, if possible, to operate without opening the sac. I cleared it on the inside, and with facility passed the knife underneath Gimbernat's ligament, and divided it. This proceeding produced no effect whatever upon the tumour, and it then became necessary to lay open the sac. I did this, and was surprised by coming, not on any intestinal contents at all, but

upon a clear cystic tumour, which projected into the cavity. This cyst is empty now, but we have the membrane of it, which can be drawn down a considerable distance. It is formed by a clear thin membrane, which, as you can see, occupied the upper part of the sac, was free from connexion with any part of the sides below the neck, and projected, as the knuckle of intestine would, down from the neck. In this condition of affairs, as we saw no intestine in the sac, the question we had to determine was what the nature of this body was. It did not itself present the appearance of any strangulation. The wall of the cyst was normal, the fluid within it clear and transparent, and I could distinctly see all its details. I was certain that it was not any part of the intestine. I attempted to pass a probe round the neck of the sac into the abdomen, to determine the relations of this body, but at every point of the circumference the probe was arrested. The division of Gimbernat's ligament had produced no alteration of tension at the neck of the sac. As Professor M'Dowel was examining the tumour, to satisfy himself as to the nature of it, it burst in his hand, and a clear serous fluid, to the amount of some two or three drachms, escaped into the wound. Immediately on that occurring the tension about the neck of the tumour subsided, and we had a distinct feeling that some material had yielded, and passed up into the cavity of the abdomen. In order to be perfectly certain, I passed a director into the sac, and divided the neck of it sufficiently to admit a finger. We felt no resistance—no body in direct relation to the opening. The operation so terminated. No material alteration in the phenomena connected with the intestinal obstruction afterwards took place. There was some slight evidence of the escape of intestinal contents, particularly gas, but no complete relief of the bowels. Two days subsequently the woman died, with the ordinary phenomena of peritonitis. On opening the cavity of the abdomen, we came on a condition of affairs extremely difficult to explain, except on the supposition that the structure or false membrane we meet with here had developed in consequence of the long wearing of a truss, and also from occasional attacks of inflammation of the sac. I have laid open the cyst, and can trace it along its entire aspect into the cavity of the abdomen. It is in direct connexion with the ileum intestine at the upper end, and forms, when distended, a sort of cylinder, which adheres to about as much as the point of the finger would cover of the intestine. There is no opening out of it into the cavity of the intestine. At first I thought that this was a congenital diverticulum, such as is often found branching from the ileum; but, on laying open the intestine, we find no recess or cavity leading off from the point of attachment, and each tunic of the intestine can be traced past and distinct from this cyst. Only the membrane of its wall is adherent to the serous coat of the intestine. At the point of junction with the cyst, and around it for an area of about the size of a shilling, the coats of the intestine show the

appearance which indicates that they were compressed in the femoral canal. The part of the intestine so marked does not consist of the entire circumference of the tube—only a small portion—and consequently the obstruction of the tube was never complete. The figures of Scarpa and of Cooper, of cases of similar incomplete obstructions of the intestine, are familiar to all. The nature of this cyst connected with the intestine and the hernial sac is not at all so familiar, nor is it easy to tell with certainty what its nature is. We can say what it is not; that it is not a congenital diverticulum, nor any normal part of the sac or intestine. Probably it is, as I have said, the result of the action of a truss upon the tumour.—*March 25, 1876.*

Ankylosis of the Knee ; Excision.—MR. STOKES said: This specimen was taken from a patient who was operated on by me in the early part of this session. The patient was a female aged twenty years. She stated that ten years before her admission to hospital, while she was playing with some of her companions on the steps of a hall door, her foot slipped, and she fell and sustained a severe contusion of her knee. She did not mind it for some days. The result of her neglect was that the knee became inflamed and got very painful. She was taken to hospital, where she remained for six weeks, during which time things went from bad to worse, and finally suppuration in the knee-joint took place. From this condition of things, and from her state generally, it was proposed to have the limb removed. This she and her friends declined to accede to, and they removed her from the hospital. In the course of time things began to mend, and finally the sinuses closed, all inflammatory action in the knee ceased, and she got well. Her knee, however, was very much bent. She was satisfied with this condition of things for nearly ten years. Last November she had another fall, which resulted in inflammation of the tissues about the knee, and she was brought to hospital with the knee very considerably swollen. After a few days rest the swelling subsided, and then she asked as to whether anything could be done to straighten it. On making an examination of the limb we found that it was perfectly immovable; that it was quite impossible either to increase the flexion of the limb or to straighten it in the slightest degree. Looking at the length of time that had elapsed from the date of the original injury, I came to the conclusion that if any operation of the kind were attempted it should be either that of Rizzoli, of Bologna, or that of Professor Gross, of Philadelphia. The bones were so firmly ankylosed that I determined the case was not adapted for either of these proceedings; that I should either excise the knee or amputate. The former operation I recommended her to submit to. She did so willingly, and accordingly I performed excision of the knee-joint, adopting the U-shaped incision. The wedge-shaped piece of bone which

I removed presents a perfect example of osseous ankylosis of the three bones of the knee-joint. It shows that either of the other operations to which I have alluded would have been out of the question in the case, and that, in fact, nothing but the excision as performed would have given any prospect of success. I may mention that the case has gone on very satisfactorily, and that the patient is now able to leave her bed. This condition of complete osseous ankylosis of the knee-joint is comparatively rare to meet with, and is therefore, I think, worthy of being exhibited to the Society.—*March 25, 1876.*

Scarlatina, with Inflammation of Serous Membranes; Hydrops Cystidis Felleæ.—DR. J. W. MOORE said: This specimen was taken three days ago from the body of a school-boy, aged ten years, who died in the Meath Hospital on the sixteenth day of scarlatina. From the outset the disease assumed a most unfavourable type. He was admitted on the third day (the 16th of March). At that time we discovered very little trace of an eruption, although it was reported that on the previous day the rash had been fully out. At this time his pulse was 120, and his heart very weak. He was so asthenic, that we were obliged to give him wine from the first. An examination of the throat showed great œdema of the mucous membrane, and the tonsils were very much enlarged, with a considerable amount of mucous secretion. The glands of the neck were swollen. An attack of diarrhoea set in on the sixth day, which lasted the best part of two days. His temperature remained persistently high, never falling below 102·2°, which was the lowest point reached on any occasion. On the twelfth day, coincident apparently with a fresh attack of lymphatic disorder in the neck, the temperature rose to 104·6°, and twenty-four hours afterwards to 105°. From that time it began to fall, but without any amelioration in the other symptoms. His pulse remained high, and even ran up to 140, while the respirations increased to 46 from 28 at the time of admission. He died rather suddenly at 1 50 p.m. on the 29th of March, the sixteenth day of his illness. The nurse stated that he raised himself in bed, grew black in the face, threw up his arms, and fell back dead. We were under the impression that there was nothing very seriously wrong with his kidneys; at all events, until the last few hours of his life. His urine was examined every two or three days from the beginning of his illness, and only on the tenth day did it present any traces of albumen. It was of high specific gravity, and was loaded with urates. Even on the fourteenth day only a trace of albumen was discoverable in it. Before the *post mortem* we attributed his death to asthenia. We supposed it possible that a clot had formed in the right heart, which was the proximate cause of his rapid death. I examined his heart carefully myself on the morning of his death, and at that time my attention was only directed to its

exceeding weakness. I did not hear any morbid sounds. It was fatal in character. On the night before he died an almost incessant diarrhoea set in, which ran down his strength very rapidly. At one time during his illness the swelling on the left side of the neck seemed to be softening. I asked my colleague, Mr. Persse White, to visit the patient, and he also was under the impression that a scarlatinal bubo was in process of formation. It was deep-seated at the time, and he would not attempt to open it. An examination of the body was made about twenty hours after death. On opening the thorax we found evidence of recent pleuritis at the base of the right pleura, and of recent pericarditis at the base of the heart. The heart has been rather cut up, for the purpose of exhibition to the class, but there are some portions of lymph round the origin of the aorta and the pulmonary artery. On opening the abdomen, a considerable quantity of apparently recent straw-coloured serum escaped from the peritoneum. The surface of the spleen, which was very large, weighing sixteen and a half ounces, was coated with a considerable quantity of recent lymph. The spleen was soft and hyperæmic. In certain parts of the intestines also there were recent deposits of lymph. The right kidney weighed nine ounces, and the left eight and a half. They were enlarged and hyperæmic, and presented a peculiar mottling. They were both in pretty much the same state. The intestines were also carefully examined, and we found in places evidence of the pathological condition which has been described by Dr. Harley, of London, under the term *psorenterie*. The mesenteric glands also were considerably enlarged. The bases of the lungs were in a state of hypostatic hyperæmia or even consolidation. Apart from the morbid appearances connected with scarlatina, we have a condition sufficiently rare to justify me in laying the case before the Society. On taking out the liver, the left lobe was seen to be distinctly marked by the left kidney, and the right lobe by the right kidney. An enormous globular mass protruded two or three inches below the inferior margin of the liver on its posterior aspect. This was the greatly distended gall-bladder. On holding it up to the light, it seemed to contain no bile, but only a slightly viscid, diaphanous secretion from the mucous membrane of the gall-bladder. The cause of the obstruction was subsequently investigated by my friend, Professor Bennett, to whom I am indebted for the following account of a careful anatomical examination, and of the analysis of the fluid contained in the gall-bladder:—

“The gall-ducts were free from disease, as far as the specimen permitted an examination to be made—that is, the cystic and hepatic ducts and the first portion of the common duct. The clear glairy mucus of the distended gall-bladder contained a sediment of biliary colour, which gave the characteristic reactions of bile pigment. There was no reason to infer that obstruction had existed in the tract of the bile duct beyond the

point contained in the specimen, for a pale, healthy structure and undilated calibre of tube, containing bile, appeared inconsistent with this supposition.—E. H. B.”

My colleague, Dr. Foot, has kindly lent me two drawings—one a plate by Cruveilhier, which represents dropsy of the gall-bladder from occlusion of the cystic duct by a large biliary calculus; the other plate is from Lebert's Atlas. It illustrates hydrops cystidis felleæ. The appearances in this plate are even more like what we see in the present specimen, particularly the exceedingly diaphanous nature of the globular swelling. The boy was reported to be perfectly healthy up to his illness. However, amongst a large number of his school-fellows who were attacked, he was the only one who presented such an unfavourable type of the disease. The scarlatina epidemic seemed to have singled him out, and to have fallen more heavily upon him than upon any of the others.—April 1, 1876.

Extra-capsular Fracture of the Neck of the Femur—Inversion of the Limb.—DR. BENNETT said: This is a thigh-bone, presenting a fracture of the neck and trochanters, together with a cast of the limb taken before dissection. The cast represents the limb in the maximum degree of eversion in which it is possible to place it without causing a fresh injury of the bone. Of the features of the cast, the most marked is the complete inversion of the thigh, which is such as to prevent the limb from being placed facing even directly forwards by the greatest degree of eversion. Again, we have a prominent tumour behind the hip-joint on the dorsum ilii, placed fully an inch above the level of the upper border of the symphysis pubis. The range of motion of the joint in an outward direction, either in the direction of abduction or rotation outwards, was extremely limited. The cast represents the fact that in the groin there existed a considerable degree of enlargement beneath the skin. The greater part of this was due to the bony masses which are seen in this position in the preparation, and which were chiefly caused by the detached lesser trochanter, while a part of it was caused by the deposits of new bone placed round the inter-trochanteric line. There are slightly enlarged inguinal glands lying over the surface. At the first glance, from this view of it, the case presented to me the features of a dislocation of the hip on the dorsum ilii. Further, any motion communicated to the limb produced corresponding movements in the tumour on the dorsum ilii. That tumour is seen in this specimen to be the displaced greater trochanter, fractured and separated from the other parts of the bone, and displaced backwards and upwards, and united to the femur by callus, so that in the dead body we had this projection sharp and well-marked above the level of the pubis, with the inverted limb, and behind it a tumour of a rounded form in the gluteal region, which was slightly above the level of the anterior

projection, and which rotated with the femur. These will all be recognised as familiar signs of dislocation on the dorsum ilii. It was easy to make a diagnosis of the case, in consequence of the emaciation of the subject. Had the subject presented a greater amount of covering of soft parts over the bones it would not have been at all so easy a matter, but in consequence of the emaciation of the body and of the fact that in so many points we could feel these bony projections and the apex of the displaced lesser trochanter, it was easy to exclude the diagnosis of dislocation. We have no other condition that would explain the phenomenon but that of fracture of the neck of the thigh-bone in the position of inversion of the limb, instead of eversion. I should also note the direction of the axis limb peculiar to dislocation is wanting in this case, as in other instances of this exceptional fracture recorded. It is for this reason that I have brought this specimen forward. It may be supposed that in the present day, considering the number of specimens of fracture of the neck of the femur that have been submitted to this and other Societies, the question had been entirely worked out as to their nature. But still this very question, which is a leading one with reference to fractures of the neck of the femur, is as yet, I think, unsolved. What is the explanation of the inversion in certain cases? It is not a result of the direction of the impaction of the fragments of the bone. If the limb had been strongly inverted at the moment of the fracture, the fragments impacted might furnish an explanation in some cases. But in a case like the present the great comminution of the upper end of the shaft rebuts that idea. There was first the impacted fracture, and then, in consequence of the extreme violence that caused it, the trochanters, between which the neck of the femur had been impacted, were burst asunder, the lesser one to the front, and the greater trochanter to the outside, and you can see that the basis of the neck presents in an interval between them, which is slightly covered with callus. The union of the neck with the shaft is not completed. The union of the trochanters is completed. The greater trochanter is firmly connected, and so is the lesser one. The specimen illustrates the rate at which ossification progresses—first, the union of the outstanding fragments; and last, the union of the impacted neck. The leading feature of the case—namely, the inversion—is, at all events, explained by only one fact, and that is, that the lower fragment is placed in front of the upper. We can hardly call it an explanation, but the fact, at all events, which was first recorded in connexion with these injuries by Dupuytren, is observable in this specimen—that fact being, that in cases of permanent inversion of the foot and limb in fractures of the neck of the femur, the lower fragment is placed in front. I thought it useful by bringing forward the present specimen to add to the recorded cases on the subject. I have already recorded two other instances of

this kind, and we have records of similar by the late Professor Smith, in our Transactions. By adding to the number of facts illustrating a single point, although we may not at once reach the explanation, we obtain a sufficiently wide basis of fact to enable us to infer the injury with certainty at all events in the living cases. I possess no history of the present case. The specimen was obtained during dissection, and so closely did the appearances resemble those of dislocation that many individuals, experienced enough to make an accurate diagnosis, actually pronounced the case to be one of dislocation.—*April 1, 1876.*

Aortic Regurgitation ; Aneurism of the Ascending Thoracic Aorta ; Cor Bovinum.—**DR. J. W. MOORE** said : This heart, with the clots which it contained, when first removed from the subject, weighed 2 lbs. 12½ ozs. ; freed from most of the clots, it still weighs 2 lb. 1½ ozs. It was taken from the body of a young man, twenty-nine years of age, who died in the Meath Hospital two days ago. He had been under observation from the 6th of February. When admitted he stated that he had been complaining for three weeks previously of a considerable cough and difficulty of breathing. His weight at that time was eleven stone, and his height five feet nine inches. He was of intemperate habits. He had married young in life, but his wife was five years dead. A year ago he contracted venereal disease, and had a chancre. Twelve years ago he had rheumatic fever, and since that time had suffered from beating of the heart. His habits were intemperate. He said that sometimes he drank as much as ten pints of beer in a day, in order to act on his bowels. At the time of his admission the cough was the principal thing which annoyed him. A physical examination of his chest at once showed that the area of precordial dulness had very much increased, especially towards the left side. There was a second area of dulness at the level of the second and third ribs under the sternum. The cardiac impulse was heard an inch and a half below the nipple, extended over an area two inches square, and was wavy in character. A double murmur was audible at the base of the heart. The second of these sounds was musical, and remarkably carried through all the vessels ; it was distinctly heard even in the posterior tibial artery. There was also a well-marked systolic apex murmur. When I speak of the large area of precordial dulness, I wish it to be understood that, strictly speaking, there were two areas of dulness. First, a limited area, that coincided exactly with the situation of the double murmur at the base. Then came a narrow band of comparative clearness, and below it a large area of the precordial dulness. At the level of the nipple the transverse measurement of this area was five and three-quarters inches ; and two and a half inches below the nipple the measurement was five and a half inches. The vertical dulness in the left parasternal line extended over eight inches, commencing two and a

quarter inches below the clavicle. The diagnosis I made was aortic regurgitation, with aneurism of the ascending aorta; at the same time the physical signs of pressure caused by any large aneurism were to a large extent wanting. However, the existence of the second area of dulness on percussion, and the marked and visible pulsation separate from that of the heart, led us to believe that there was aneurismal dilatation of the ascending aorta. On the 9th of February he complained of great headache. On the 22nd of February there was a marked diminution in the second or superior centre of pulsation. On the 25th of February his feet began to swell. On the 6th of March there was marked œdema of the lower lobe of the left lung. On the 7th of March the systolic apical murmur had become musical, and was greatly intensified. On the 9th of March there was dulness on percussion over the bases of both lungs, but more especially the right. On the 10th of March there was an enlargement of, and marked tenderness over, the liver. On the 14th of March great dyspnoea set in, and there was rapid increase of œdema of the lower limbs, which were now abundantly studded with purpuric spots. His urine was highly coloured, turbid, and strongly acid in reaction. Its specific gravity was 1021. It was perfectly free from albumen. On the 28th of March, six days afterwards, ascites was detected. A day or two afterwards he got panic-stricken, and left the hospital. On the 5th of April he came back, craving for re-admission. At this time there was enormous anasarca of the lower extremities. It was impossible to make a physical examination of his chest, but I now ascertained that the first of the basic cardiac murmurs had disappeared, and that the second had become intensified, and was exceedingly musical. He was propped up, and could not change his position, but all over the front of his chest we heard loud crepitating râles. He died at two p.m. on the 6th of the present month. His lungs were congested, and the lower lobes of both lungs were in a state of hypostatic consolidation. In certain parts of both lungs also there was evidence of older consolidations, and there was extensive recent pleuritis in the right pleura. The heart is enormously enlarged. It illustrates the condition known as *cor bovinum* in a marked degree. Every one of the cavities of the heart contained large quantities of blood like black-currant jelly. The pulmonary artery was widely dilated. The right ventricle and the right auricle were considerably dilated. I have restored the clot which we found in the right auricle, in order to show the original condition of parts. Turning to the left side of the heart, we found extreme hypertrophy, with dilatation of the left ventricle. The mitral orifice was much dilated, and on the flaps of the valve were abundant fibrinous deposits. The aortic valves were exceedingly diseased, and one of them was fringed with considerable masses of rough vegetation. Just above the aortic valves, and on the anterior aspect of

the aorta, was an aneurism, globular and about the size of a moderately large orange. Examining the aorta from above, we found that the intima was injected, and that there were other evidences of more or less recent atheromatous change throughout its entire extent. One of these patches of atheroma was to-day examined by one of our pupils, who told me that it presents the characteristics of commencing atheroma. As to the etiology of the morbid processes in this case, there are two or three points in the clinical history deserving of note. First, the rheumatic fever twelve years ago; then the recent venereal disease; and thirdly, intemperance such as might possibly have induced gouty changes in the body. The diagnosis was comparatively easy at first, but afterwards seemed to become more difficult, owing to the disappearance of the secondary centre of pulsation. It then became a question whether there was any aneurism at all or not. The pulsation, which was at first very marked, completely disappeared, and it was assumed that a simply dilated aorta, with very incompetent valves, would cause the physical signs which we had previously heard. Dr. Stokes, in his work on "*Diseases of the Heart and Aorta*," says that there are two diseases which, from the great amount of arterial throbbing with which they are attended, lead to a suspicion of aneurism, although no such disease exists, and these are permanently patent aortic valves and gouty irritation of the aorta. The diagnosis of the first presents no difficulty. In the other case he made a diagnosis of aneurismal alteration, but the patient was afterwards proved to have had no aneurism at all, and the case was really one of gouty aortitis. The question is as to whether the recent atheromatous changes may not be partly due to the syphilitic history of the case and to the occurrence of a certain amount of aortitis through gout. The urine was loaded with urates, but that might be explained by the condition of the man at the time when the examination was made. The pulse was eminently sledge-hammer in character, and all the physical signs of aortic regurgitation were well marked.—*April 8, 1876.*

Papilloma of the Bladder.—DR. A. W. FOOT exhibited a specimen of papilloma or villous tumour in the bladder, which had been the source of almost incessant hæmaturia for a period of three years. The diseased growth occupied the usual—according to Rindfleisch the invariable—situation of such tumours, the trigonum vesicæ between the openings of the ureters. It had occluded the orifice of the right ureter, whose vesical aperture was impervious to the finest probe. This ureter was distended to the size of the thumb, and equalled in breadth contracted portions of the large intestine of the same subject. The right kidney was expanded with retention cysts at the expense of its parenchyma, which was atrophied by the excentric pressure of its over-distended pelvis, infundibula,

and calyces. The left ureter was pervious and normal, the kidney enlarged and fatty. The capacity of the bladder was increased, its mucous membrane was of a pale cream colour, more or less bathed in pus, which had been for some days passing away in the urine. The papillomatous growth sprang from an irregular base, about two inches broad by two and a half inches long. Viewed under water, its pale, soft, shaggy structure protruded about half an inch from the mucous surface, and consisted of a number of arborescent groups of villi, whose large capillaries here and there imparted to the growth a faint rosy tint. In all probability the cessation of the circulation was the cause of the pallor of a part which had been the source of such an abundant and prolonged hæmorrhage. There was a second sessile, condylomatous-looking growth, about as large as a fourpenny-piece, to the other side of or above the orifice of the left ureter. A piece of one of the tufts of the larger growth was snipped off and examined with the microscope. Under oc. 3 obj. 8 Hartnack, it was principally composed of fusiform, spindle-shaped, and caudate cells, all studded with oil granules, and among them were very numerous pigmentary particles.

Dr. Foot also exhibited the anus and rectum of the same patient, which presented in a marked manner the pathological features of chronic hæmorrhoidal tumours. The anal aperture was occupied in the cadaver by rings of transverse rugæ, studded with rounded protuberances and fungoid tumours of considerable size; inside the anus the mucous membrane was thrown into longitudinal, swollen, bluish folds, streaked with loops of varicose vessels. An incision into one of the anal protuberances showed calyciform dilatations, containing blood clot; one into a longitudinal elevation showed a spongy tissue, the pores formed of the lumina of dilated veins—the septa, of their coalesced walls.

The subject from whom the specimens had been taken was a man, aged sixty-five, who had all his life followed a sedentary occupation at office work. For the last thirty years he had suffered from piles, which constantly bled for a fortnight at a time; he used to employ some simple domestic remedy whenever the hæmorrhage was unusually severe. Three years before his death the piles ceased bleeding, and hæmaturia came on. He knew of no cause for this translation of the hæmorrhage, which never returned to the rectum. He experienced no distress or anxiety from the metastasis of the bleeding, and did not consult a physician for two years. He then applied to a very eminent medical man, and was ordered a mixture of buchu and hyoscyamus, after which the hæmaturia ceased for two months; on its return the medicine proved ineffectual. He came into the Meath Hospital 1st March, 1876, having been then suffering almost continually, with the exception of the two months' interval, from hæmaturia for three years. He sought admission because he now had severe pain in micturition, which was frequent, except when he passed

urine in the horizontal position. The urine was the colour of port wine; and extremely albuminous, sp. gr. 1022, thick with blood corpuscles, which remained isolated; about half were bi-concave and half crenated; no renal tubes were observed in any of the microscopic examinations of the urine. He was blanched in colour, but had no œdema of any part; was muscular and corpulent; had a good appetite and slept well; was cheerful, and made very light of his condition, which seemed not to concern him much. He had very slight pain across the small of the back; none in the hypogastrium; he had never had any stoppage or retention of urine; he had no symptom of renal or vesical calculus, or of enlargement of the prostate as well as could be determined by an examination through the rectum, and by the ease with which a catheter could be passed into the bladder. He had no indications of purpura or of the hæmorrhagic diathesis; had led a regular life, and had enjoyed what he considered to be excellent health. His principal distress now was from severe pain during micturition, which took place three or four times in an hour while awake, but he could sleep from four to six hours at a stretch through the night. This pain was relieved very much by lessening the acidity of the urine with the following:—℞. Benz. ammon., sod. bicarb., tinct. hyos., ad. ʒij.; dec. lini ad ʒviiij.; ʒj. t. d. Attempts to check the hæmorrhage were on two occasions followed by coagulation of the blood in the bladder and troublesome consequences. On one occasion this followed the use of an electuary of treacle, and on another the use of glycerine of gallic acid and ergot of rye. On the second occasion the use of a large-sized silver catheter, the double current catheter, with pressure of a column of water ten feet high—and, finally, Dieulafoy's aspirator, attached to a catheter, failed to extract enough of the coagula to give relief. With a view of dissolving the fibrine by digestion, a mixture of pepsine 80 grs., ac. mur. dil. 20 m., liq. ext. op. ʒj., aq. ʒiv., was injected and left in the bladder. This seemed to have a good effect, as the retention soon after subsided, and clots began to pass freely. Cystitis, however, set in; the urine became fœtid, alkaline, and ropy, retaining the colour of port wine. The cystitis continued for a week, at the end of which time the hæmaturia had ceased, the urine had again become acid, but contained a sediment of pus cells. This beneficial change occurred during the use of iron and quinine, and five grains of salicylic acid in powder three times a day. At this time, 29th March, the urine was a lighter colour than it had been for the past year. Coincident with the cessation of the hæmaturia the piles began to trouble him, large hæmorrhoidal tumours, impossible to replace, descending through the anus, furnished a thin mucosanguineous discharge; leeches and puncturing the œdematous mucous membrane relieved him for the time. Early in the morning of 11th March he had an attack of vomiting, which returned in the afternoon; the pulse, temperature, and respiration rose; diarrhœa set in; a mildly

delirious and apathetic state of the brain came on, and he died in about forty-eight hours after these changes had occurred. The amount of subcutaneous and visceral fat in the body was very remarkable in connexion with the protracted loss of blood. There was no glandular enlargement or secondary deposit. The unhealthy hue produced by loss of blood on one of a naturally dark complexion, taken by itself, was deceptive. In the diagnosis of the cause of the hæmaturia in this case renal and vesical calculi were excluded from the absence of their accompanying symptoms; the hæmorrhage, often protracted, of some forms of Bright's disease was eliminated from the marked absence of dyspeptic symptoms and œdema, and the diagnosis lay between vicarious hæmaturia and hæmorrhoids or villous tumour of the bladder. It is most probable that the hæmorrhage from the rectum ceased on the formation of the papilloma, because the structure of the latter offered greater facilities for the relief of congested pelvic veins, but there is no evidence to show any other connexion between the pathological conditions of the rectum and bladder than one of coincidence. That the vascular sympathy between the rectum and bladder is sufficiently intimate to allow of a mutual metastasis is an admitted fact, but it does not require the existence of a vesical papilloma to permit of the change.—*April 8, 1876.*

Congenital Exomphalos.—DR. ATTHILL said: This is a specimen of exomphalos in an infant, still-born, at about the sixth month of pregnancy. It is interesting to pathologists and also to the obstetrician, because occasionally exomphalos becomes developed to such a size as to offer a serious impediment to childbirth. It also occasionally perplexes the attendant so greatly before the birth of the child as to render it impossible for him to arrive at an accurate diagnosis of the case. This protrusion, or rather development, of the entire intestines outside the abdominal wall is of rather unfrequent occurrence, but examples of it are met from time to time. The exomphalos is covered by a prolongation of the integuments of the cord, which forms a transparent envelope, through which the contents of the sac can be seen. The protrusion itself takes place through the umbilicus. The sac in this case contains the entire of the intestines, as well as the liver. You observe that the liver is very large, and the stomach small, and below the stomach, in the sac, is the great mass, if not the entire, of the small intestines. The child, on account of its premature condition of its development, was born without any difficulty.—*April 8, 1876.*

Cerebral Abscess.—DR. JAMES LITTLE said: This is the brain of a French governess, aged twenty-two years. Five months ago she began to get into bad health. The indications of bad health were at first rather vague, but appear to have consisted of occasional severe headaches, constipation,

a feeling of being miserable, and loss of appetite. Six weeks ago she began to lose power in her right arm, and on the 28rd of March the loss of power in that arm was complete. A few days later she began to lose power in the right leg, and by the 31st of March the loss of power in the right leg was complete. I saw her on the 5th of the following month, and had her removed from the house where she was governess to the hospital. When I saw her the phenomena were as follows:—There was complete palsy of the right arm and right leg; there was partial and incomplete palsy of the facial nerve on the same side—that is, the palsy was merely indicated by flatness of the muscles on that side and by drawing of the face to the opposite side when she laughed or smiled. She had not the staring eye or the other symptoms of portio dura paralysis, as commonly observed. The first thing that struck us was the entire absence of any aphasia. Though she laboured under the disadvantage of being a foreigner, she, nevertheless, explained her symptoms very well, and had no difficulty either in articulation or in finding the words she wanted to use. When she had been in hospital for a few days indications came on of paralysis of the third nerve on the opposite side. She had slight ptosis, and dilated pupil, and diverging strabismus of the left eye. She also had two slight convulsive attacks; in these there was clenching of the paralysed fingers, and internal strabismus, and contracted pupil on the paralysed (right) side. We analysed these symptoms as well as we could, and arrived at the conclusion that she had disease in the upper part of the pons, probably implicating the *crus cerebri* on the left side. It was evident that the disease, wherever it was, was above the decussation of the facial nerve. Taking into consideration the gradual way in which the symptoms had come on, I arrived at the conclusion that there was a tumour, and this conclusion was strengthened by the fact that, after ophthalmoscopic examination, Mr. Swanzy informed me that there were congestion papillæ in both eyes. She gradually became comatose, and died yesterday.

Mr. Thomas K. Hamilton, who examined the body, thus describes the appearances:—"On examining the scalp, no external marks of violence could be found. On removing the calvarium, the dura mater was found healthy, but on removing this membrane, the upper surface of the brain was seen to give way, and purulent matter, to the extent of six ounces, escaped. The abscess was situated in the posterior lobe and in the posterior part of the middle lobe of the left hemisphere; it was lined by a tolerably firm sac, the limits of which corresponded to the following points:—*In front*, to the posterior, transverse, or ascending parietal convolution; *posteriorly*, to about the middle of the occipital convolutions, or, in other words, to a point corresponding to the middle of the upper part of the cerebellum; *superiorly*, it reached nearly to the surface of the hemisphere, for a space the size of a five-shilling piece it involved the grey

matter, at other points it lay about half an inch below the surface; *inferiorly*, on cutting through the centrum ovale minus and centrum ovale of Vieussens, it was found to extend down to, but not to involve or open into, the lateral ventricle. The greenish yellow pus could be seen through the corpus callosum forming the roof, but the ependyma was healthy, as were the structures on the floor of the ventricle, except that they presented a flattened appearance. The abscess may be said to involve—of the *middle* lobe, the posterior, parietal, and the upper, middle, and lower parietal convolutions; and of the *posterior* lobe, the anterior parts of the upper, middle, and lower occipital convolutions. The third pair of nerves seemed somewhat flattened and larger than usual; otherwise no change was observed on the base of the brain, or in the supra-orbital region. The pus was foetid.”—*April 22, 1876.*

Aneurism of the Abdominal Aorta.—MR. TUFNELL said: The specimen which I am about to lay before the Society to-day is of some interest, because it exhibits the power we possess of controlling a disease which until recently was looked upon as almost incurable. I mean abdominal or thoracic aneurism. In the patient from whom this preparation was taken the primary aneurism was consolidated, and had it not been for the formation of a second aneurism lower down, he might have survived for years. The history of the case is as follows:—James McLaughlin, aged twenty-four, a moulder, was admitted into the Royal Infirmary, Glasgow, on the 23rd of October, 1874. Subsequently he was transferred to the Weston Infirmary, upon its being opened, in November, under the care of Dr. McCall Anderson. He stated that his present illness commenced three months before admission, with pain in the abdomen, and when he was admitted a tumour of the size of a hen's egg was detected in the epigastric region, inclining slightly to the left side, pulsating and expanding with soft systolic murmur, its point of maximum intensity being midway between the ensiform cartilage and umbilicus. He remained under treatment in Glasgow until the 5th of May, 1875, when he left for Dublin, and was admitted on the 6th into the City of Dublin Hospital, under the care of Dr. Finny, who, with Dr. Hawtrey Benson, kindly took charge of him, and permitted me to watch the case, it being under the treatment by recumbency and restricted diet. The tumour now was of considerable size, globular in form, and having all the usual signs of abdominal aortic aneurism. The dorsal pain was very severe, and this was succeeded, upon the 29th of May, by an acute attack of pain in the epigastrium. On the 31st the pain had subsided, and the tumour felt, when handled, much firmer at either side. On the 3rd of June he had a violent attack of vomiting, with renewed pain in the epigastric region. This ceased on the following day, and the pulse, which upon admission had been 72, was now reduced to a regular beat of 52, being a diminu-

tion of 20 pulsations per minute. From this time the pulsation in the aneurism daily became less and less distinct, the patient himself saying that he felt that the tumour was quite hard. The pulsation by the 10th had become more of an upward heaving motion than distensile. There was now also no pain in handling the tumour, which was one-third less in size than a month before. On the 16th of June the murmur had quite gone, and could not be detected anywhere over the front or sides of the sac, and the pulsation was not more than could be expected from a tumour overlying the current of blood in the aorta. On the 20th of June, however, pain set in in the neighbourhood of the tumour, and five days afterwards the patient called attention to the lower and right side of the tumour as being the seat of pain, which now passed into the right hypochondrium. More pulsation could now be felt by palpation, and a murmur had reappeared in the lower part and to the right side. By the 15th of July the pulsation had become decidedly distensile, and the tumour was now nearly double the dimensions that it had been a month before. The murmur was prolonged and loud all down the right side of the sac. The patient suffered, too, from increased pain, and on the 1st of September the tumour had so increased that it could be seen projecting forward and to the right side as he lay in bed. He became now very anxious and desponding, his countenance pale, and his pulse very quick. This state gradually increased, the paroxysms of pain being more and more intense, and the tumour growing larger and larger, until December 29th, when he died. During the week preceding his death vomiting constantly occurred, in spite of all remedies. The daily growth of the tumour was quite perceptible, and it was soft and flexible to the touch, whereas some days before it had been tough and resisting. The patient could no longer lie down in bed, and the retching was the cause of his being able to take very little support. On the third day before he died he had a fainting fit—his lips became pale, his pulse quick and thready, and his heart's action fluttering—but this soon passed off; the tumour was now scarcely perceptible. By degrees he grew weaker. At last, after suddenly uttering a loud cry, he was seized with an epileptic fit, and his life terminated in about fifteen minutes afterwards. On a *post mortem* examination the primary aneurism was found to spring from the abdominal aorta, just below the crura of the diaphragm, the left crus being blended intimately with the wall of the aneurism, the lower limit being at the origin of the celiac axis. The tumour bulged forward between those two points to the extent of five and a quarter inches, from above downwards, and transversely for no less than eight inches, superficial measure, and was of rounded oval form. The contents of the sac consisted of solid layers of fibrine filling the chamber to the level of the aortic channel, and converting the aneurism into one solid mass. The opening from the aorta into what had been the aneurismal

sac was about equal to the tip of the index finger. Springing from beneath the coeliac axis was the second aneurism, circular in form, bulging to the right side, and overlying the aorta to an inch below the level of the left renal vein. The circumference of this tumour consisted partly of the vessel in its outer coats, but mainly of the peritoneum and the inferior cava, together with the left renal vein. This aneurism had burst immediately below the superior mesenteric artery, giving way on the left side, the hæmorrhage taking place between the layers of the mesentery, and passing into the iliac fossæ. This sac did not contain any fibrine whatever. The aorta, from the termination of the arch to an inch below its bifurcation, was healthy throughout, anteriorly and posteriorly, except at the portions engaged in the origins of the two aneurisms, and implicating that part of the vessel which lies between the crura of the diaphragm and the superior mesenteric artery. The kidneys were both normal in size and healthy in structure, the renal arteries being perfectly natural. The urine during life was quite healthy. The muscles of the walls of the chest and abdomen where cut across, were high in colour, and very firm. The heart was fat, but not diseased, either in structure or valvular apparatus.—*April 22, 1876.*

Carcinomatous Tumour of the Breast.—MR. CORLEY said : Tumours of the breast are so common that I should scarcely have thought of exhibiting this specimen to the Society, but that it presents, in a remarkable degree, peculiarities which materially increase in such cases the difficulties of diagnosis. Harriet Hill, aged fifty years, the mother of eleven children, rather delicate-looking, but with an antecedent history of unusually good health, was admitted into the Richmond Hospital on the 22nd of April. She was suffering from what, on examination, proved to be a mammary tumour, about the size of an orange, hard and heavy, with one or two large veins ramifying under the superjacent skin, which, however, was freely movable over the gland. There was no retraction of the nipple, no pain or tenderness on handling, and there was a decided feeling of fluctuation at two points. A remarkably distinct pulsation could be felt, which was partly communicated through the thoracic parietes from the heart, but was partly in the tumour itself, as could be felt by lifting it up, and isolating it from the chest wall. She gave the following history of her case, and no doubt intended to tell everything correctly. About a month—not more—before her admission into the hospital, she discovered, on getting up in the morning, the tumour in her breast, and it was then nearly as large as it was on the day she applied for admission into the hospital. She was perfectly satisfied in her own mind that the tumour did not exist on the night before when she lay down, and as both of her breasts were unusually small and atrophied for her age, she thought that she must have remarked it before if it had existed. Such was the history

the woman gave, but my colleague and I were convinced that she must have been mistaken in some respects. We made several examinations of the tumour. It was at the upper part that there was the feeling of fluctuation, and from its character and history we were inclined to think that it was a form of cystic sarcoma, and that it must have existed for some time without having attracted her attention, although from its size it was difficult to conceive how it could have escaped her observation. After full consultation we thought it well to have it removed. There was one gland high up in the axilla, which seemed slightly enlarged. We operated about a week after she came in, and removed the tumour completely. In getting it out the lower cyst ruptured, and the skin seemed so healthy that I saved as much of it as I could. On taking out the tumour, and making a section of it, we found some very remarkable characteristics. In the first place, its naked-eye appearances were those of true cancer. In the next place, in the unruptured cyst we discovered a large extravasation of blood, partly coagulated, and partly mixed up with broken-down tissue. This was what gave the sensation of fluctuation that we felt before the operation. My colleague, Dr. Harvey, made a microscopic examination of the growth, which proved it to possess the usual histological elements of true cancer, being on the boundary line between the hard and soft varieties of the disease, having the aspect usually attributed to marked malignancy. There is no doubt that it must have existed longer than she thought. My explanation of the history was that perhaps on the night she spoke of she lay on her breast, and caused the extravasation of blood, which increased the size of the tumour to such a remarkable degree that her attention was directed to it next morning, and then for the first time she perceived its existence. Perhaps the pressure of the extravasated blood in the vessels that fed the tumour was the cause of the remarkable pulsatile throbbing that we noticed during life.—*May 6, 1876.*

A NEW VEHICLE FOR QUININE.

IN the numerous cases in which we wish to prescribe sulphate of quinine, a clear solution, free from turbidity, is a *desideratum*. With aromatic sulphuric acid we get a passable solution, but the acid is often objectionable if not absolutely contra indicated. Dr. Isaac Smelt, Junr., finds that, in practice, the sweet spirits of nitre is all that is desired. One ounce of it will dissolve about two drachms of quinine, giving a transparent solution. He is not aware whether this mode of administering quinine has been previously recommended, but to those who have not used it he believes it will be a success most agreeable to both patient and physician.—*N. Y. Med. Jour.*, Aug.

CLINICAL RECORDS.

CORK-STREET FEVER HOSPITAL.—*Case of Scarlatina, Rheumatism, and Jaundice, following Confinement; Recovery.* Under the care of DR. GRIMSHAW.

THE following case is one possessing considerable interest, on account of the extreme rarity of recovery under such circumstances.

Martha B., a native of the County of Wexford, aged thirty-nine years, married, has had four children, two of whom are still living, came to Dublin on the morning of July 15th, 1876, and went to lodge at Ellis-place. On the 16th labour set in; she was admitted to the Coombe Lying-in Hospital, and delivered of a still-born child at 11 p.m. She went on tolerably well until the night of the 19th, when she was attacked with rigors. On the following day she was worse, and on the 21st her throat became sore, and a scarlatina rash made its appearance. She was at once sent to Cork-street Hospital, where I saw her for the first time, on the morning of the 22nd. She was an extremely fat, soft, flabby woman, and informed me that she had been subject to bilious attacks for several years, and had not enjoyed good health during her late pregnancy. She suffered from piles and had swollen veins in her legs. The nurse remarked that she was very "heavy in the bed," and between her great weight and debility it was difficult to move her. All the symptoms of scarlatina were well-marked—the throat, tongue, and rash, were characteristic of the disease. Her throat was especially sore, and the swelling so considerable that she opened the mouth with difficulty, and was scarcely able to swallow. The pulse was 120° per minute, very feeble and compressible; the heart sounds were distinct but very weak; temperature 101·6°. There was a well-marked *arcus senilis* around the cornea. The lochial discharge was plentiful and healthy. The eyes were of a jaundice hue, and the skin well-marked yellow over the whole body, this gave a peculiar tinge to the scarlatina rash; when the surface was pressed by the fingers in the ordinary way the scarlet rash vanished (as usual), but left a bright yellow skin behind. There was a tenderness over the liver. The fæces were plentiful, rather hard, but very pale, almost white; the bowels had been too free. All the larger joints were painful and swollen, as in acute rheumatism; the wrists were especially painful, and more swollen than the ankles or knees. The abdomen was tender, but not markedly so. Diagnosis:—Scarlatina, jaundice, and scarlatinal rheumatism. The question arose—was it not a case of

pyæmia? Ordered:—Tinct. of perchloride of iron 33 in 38 of water, one ounce to be taken every third hour; all joints to be packed in cotton wool; poultice around throat; calomel 5 grs. immediately; milk *ad libitum*; wine 38. In the evening the temperature was 100·3°, and the pulse about same as morning.

23rd.—Temperature 100·3°; pulse weaker than yesterday; rash diminished on legs; jaundice more intense. Ordered:—31½ of sulphate of quinine to be added to mixture, and increase wine to 312.

24th.—The rash nearly gone; desquamation commencing on face; jaundice diminished; bowels moved regularly, but fæces still pale; temperature 98·4°.

25th.—Still improving.

26th.—Rash all gone; jaundice much less; prefers whiskey and soda-water to wine. Ordered:—Whiskey 34, with soda-water; reduce wine to 38; joints much less swollen.

27th.—Jaundice gone; fæces coloured dark by iron.

28th.—All symptoms diminished; lochial discharge slightly offensive; slight abdominal tenderness.

29th.—Continues to improve; removed cotton wool from joints, which are now well.

31st.—Transferred, convalescent, to Dr. J. W. Moore; and wine reduced to 34.

August 2nd.—Had some chicken-broth; and wine reduced to 32; wished for lemonade, which was given to her. She steadily improved; her wine was discontinued; and she had chicken for dinner on August 7th. On 10th, she had a warm bath. She was discharged perfectly well on August 25th, 1876.

NEW AGENT FOR THE PRODUCTION OF SLEEP.

W. GREYER (*Centralbl.* 1876, No. 35), considering that sleep followed the exhaustion caused by muscular and nervous work, and that certain substances, especially lactic acid, are formed and are in excess in the blood at such times, experimented upon the introduction of lactate of soda into the blood. He found that when a watery solution of this substance was injected subcutaneously or in large quantities into the stomach, drowsiness and sleep resembling the natural condition were produced. When the animal was awakened it behaved as if the sleep had been normal; ate and drank, but when left alone went to sleep again, and later awoke in its natural condition. Lactates of potassa, calcium, and magnesia are not recommended for use in man.—*American Psychol. Journ.*

R. A.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS of Eight Large Towns in Ireland.

Four Weeks ending Saturday, August 12, 1876.

| Towns | Population in 1871 | Births Registered | Deaths Registered | DEATHS FROM ZYMOTIC DISEASES | | | | | | | | Annual Rate of Mortality per 1,000 Inhabitants |
|--------------|--------------------------|----------------------|----------------------|------------------------------|---------|------------------|------------|-------------------|-------|-----------|--------|---|
| | | | | Small-pox | Measles | Scarlet Fever | Diphtheria | Whooping Cough | Fever | Diarrhoea | | |
| Dublin, - | 314,666 | 722 | 483 | — | 5 | 12 | 3 | 8 | 11 | 20 | 20.0 | |
| Belfast, - | 182,082 | 515 | 283 | — | — | 5 | 1 | 7 | 6 | 16 | 20.2 | |
| Cork, . - | 91,965 | 157 | 146 | — | 2 | — | — | — | 4 | 7 | 20.7 | |
| Limerick, - | 44,209 | 104 | 78 | — | — | 1 | — | — | 3 | 4 | 22.9 | |
| Derry, - | 30,884 | 46 | 38 | — | — | 4 | — | 1 | — | 1 | 16.0 ! | |
| Waterford, - | 30,626 | 59 | 42 | — | — | — | — | — | — | — | 17.8 | |
| Galway, - | 19,692 | 11 | 17 | — | — | — | — | — | 1 | — | 11.2 | |
| Sligo, - | 17,285 | 35 | 16 | — | — | — | — | — | — | — | 12.0 | |

Four Weeks ending Saturday, September 9, 1876.

| | | | | | | | | | | | |
|-------------|---------|-----|-----|---|---|----|---|----|----|----|--------|
| Dublin, - | 314,666 | 677 | 469 | 1 | 4 | 18 | 3 | 5 | 18 | 60 | 19.4 |
| Belfast, - | 182,082 | 495 | 337 | — | — | 6 | — | 20 | 11 | 32 | 24.1 |
| Cork, - | 91,965 | 207 | 179 | — | 1 | 1 | 2 | 1 | 1 | 13 | 25.3 |
| Limerick, - | 44,209 | 65 | 67 | — | — | 1 | — | — | 2 | 2 | 19.9 |
| Derry, - | 30,884 | 75 | 56 | — | — | 2 | — | 2 | — | — | 23.6 |
| Waterford - | 30,626 | 49 | 43 | — | — | — | — | — | 2 | 3 | 18.2 |
| Galway, - | 19,692 | 53 | 37 | — | — | — | — | — | 1 | 2 | 24.4 ! |
| Sligo, - | 17,285 | 27 | 17 | — | — | — | — | — | 1 | 3 | 12.8 |

Remarks.

To August 12.—The death-rate in all the Irish towns was moderate or low. That for Londonderry is still uncertain, owing to the absence of a Registrar from the Glendermot District during the first three weeks of the

period. In London the death-rate was 26·6 per 1,000 of the population annually, in Edinburgh 17·8, and in Glasgow 22·5. If the deaths in public institutions are assigned to the districts from which the deceased were admitted, the rate of mortality in the Dublin Registration District proves to have been only 19·4 instead of 20·0 per 1,000, as above. Zymotic affections—with the exception of diarrhœa—were not very fatal; and even the disease named caused but a trifling mortality in the Irish towns compared with that in London and other places in Great Britain. In London the diarrhœal deaths in the four weeks were 457, 522, 401, and 294 respectively. Of these 1,674 deaths, 1,411 were of *children under one year old*. This “slaughter of the innocents,” by the summer plague of large cities, was checked by a plentiful rainfall and cooler weather at the end of July.

To September 9.—In Cork, Belfast, Galway, and Londonderry, the death-rate was rather high—in Dublin and the other towns it was low. The returns for No. 1 District, Galway, are wanting for the first week, hence the note of interrogation in the column above. In London the rate of mortality was 20·2 per 1,000 of the population annually, in Edinburgh 15·5, and in Glasgow 20·8. The corrected death-rate in the Dublin Registration District was 18·8 per 1,000. Zymotic diseases showed an increased fatality. In Dublin, scarlatina, fever, and diarrhœa—in Belfast, whooping-cough, diarrhœa, and fever—and in Cork, diarrhœa—prevailed. Of the 60 deaths referred to diarrhœa in Dublin, 51 were of children under five years of age. In London the diarrhœal deaths amounted to 663, compared with 1,674 in the preceding four weeks—the weekly numbers being 232, 198, 134, and 99 respectively. The fatal case of small-pox in Dublin was that of a girl aged eighteen, who contracted the disease in the wards of Sir P. Dun’s Hospital, and who died at the Meath Hospital on the eighth day of hæmorrhagic small-pox. Of the 18 fever deaths, 14 were caused by typhoid.

ERRATUM.—In the heading of last month’s “Sanitary and Meteorological Notes,” for “July 22nd” read “July 15th.”

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.,
for the Month of August, 1876.*

| | | | |
|--|---|---|----------------|
| Mean-Height of Barometer, | - | - | 29·938 inches. |
| Maximal Height of Barometer (on 10th at 9 a.m.), | | | 30·348 „ |
| Minimal Height of Barometer (on 3rd at 4.45 a.m.), | | | 29·027 „ |
| Mean Dry-bulb Temperature, | - | - | 59·3° |
| Mean Wet-bulb Temperature, | - | - | 55·8° |
| Mean Dew-point Temperature, | - | - | 52·7° |
| Mean Humidity, | - | - | 78·8 per cent. |
| Highest Temperature in Shade (on 14th), | | | 73·4° |
| Lowest Temperature in Shade (on 25th), | | | 41·3° |
| Lowest Temperature on Grass (Radiation) (on 25th), | | | 36·1° |
| Mean Amount of Cloud, | - | - | 51 per cent. |
| Rainfall (on 14 days), | - | - | 2·260 inches. |
| General Direction of Wind, | - | - | N.W. and W. |

Remarks.

A series of barometrical depressions, travelling towards the N.E., caused a few days of broken weather at the commencement of the month. The cyclone of the 3rd was especially severe, the barometer falling slightly below 29 inches near the centre of the disturbance. Torrents of rain fell in Ireland, Wales, and the North of England; the fall in Dublin was ·910 of an inch, but at Kingstown 1·27 inches were registered. A period of beautiful summer weather with light airs and great warmth succeeded. As usually happens, these conditions were the result of an anticyclone, or area of high barometrical pressure, which lay over Western Europe from the 5th to the 16th. In Dublin the heat was tempered by sea-breezes, but in central England it was intense, the maximal readings of the shade thermometer in London being—7th, 82°; 8th, 84°; 9th, 88°; 11th, 81°; 12th, 85°; 13th, 96°; 14th, 93°; 15th, 92°; 16th, 89°; 17th, 85°. On the 17th a very severe thunderstorm travelled from S.E. across the south and centre of Ireland. After sunset the whole south-western sky, as seen from Dublin, was lighted up by frequent flashes of lightning, and at 10 p.m. the storm burst over the city itself. The clouds were at a considerable height above the ground, so that the thunder followed the flashes of lightning at a rather prolonged interval. Very heavy rain, with some hail, fell. The weather now became broken and cold for the time of year, the minimum thermometer sinking to 41° in Dublin, 37° at Nottingham, and 40° at Cambridge, on the morning of the 25th. On the 30th another very serious cyclone crossed the British Isles, strong N.W. gales being felt in its rear on the 31st. The barometer sank to 28·92 at Shields at 8 a.m. of the 31st. The rainfall accompanying this disturbance was insignificant in Dublin, but it exceeded 2 inches at Ardrossan, 1½ inches at Greencastle, and 1½ inches at Leith.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

BUTYL-CHLORAL (CROTON-CHLORAL).

DR. OSCAR LIEBREICH, in a notice on this body (*Pharm. Post*, May), in which he acquiesces in the statement by Krœmar and Pinner that its composition and relations are more definitively expressed by the first of the two names given above, says, that in consideration of the difficult solubility of butyl-chloral, he first tried alcohol as a solvent. In a freshly prepared solution containing 1 gramme of alcohol for each gramme of substance, the action of the former is not prejudicial, but if employed in larger proportions, or if the solution is allowed to stand a long time, a change occurs which seriously impairs the action of the solution, and this change is referable to the alcohol. Dr. Liebreich, therefore, recommends the following prescription:—Butyl-chloral hydrate, 5 to 10 grammes; glycerine, 20 grammes; distilled water, 130 grammes; D.S., to be taken after shaking. The patient takes one tablespoonful, after five minutes a second, after ten minutes a third. It is always well to proceed at first with small doses, so as to avoid the inception of a hypnotic quantity. In the evening, 1, 2, or 3 grammes may be given, according to the constitution of the patient, so as to act at once as a narcotic. In any case the prescription may of course be modified according to the intensity of the case and the idiosyncrasy of the individual. Butyl-chloral gives immediate relief in cases of pain proceeding from the teeth. The remedy is best taken just after meals, and should be followed by a copious drink of water.—*Chemist and Druggist*, June 15.

MODIFICATION OF BOETTGER'S TEST FOR GRAPE SUGAR.

BRÜCKE (Fresenius's *Zeitschrift*, 1876, p. 100) recommends a modification of this test which renders it in many respects preferable to Trommer's test for detecting sugar in the urine. When an alkaline solution of the sulphate of copper is used, as in Trommer's test, other substances besides sugar—uric acid, for example—which exist in the urine, cause a reduction of the cupric oxide when the fluid is boiled, a decolorisation taking place; although there is no precipitation of the red oxide in the absence of sugar unless the amount of the other substances is very large and the boiling is continued for some time. Another objection to Trommer's test is that the precipitation of the red oxide of copper, even when sugar is present in considerable amount, may be prevented by the presence of certain substances in the urine which hold it in solution.

Trommer's test is, however, preferable to the bismuth (Boettger's) test as ordinarily employed, on account of the formation of the black sulphide of bismuth, when any organic sulphur compounds, such as albumen, pus, and mucus are present in the urine. This sulphide of bismuth cannot be distinguished by its appearance from metallic bismuth which is formed when sugar is present. In order to obviate this objection, Brücke recommends the following modification:—Instead of using subnitrate of bismuth, the potassio-bismuth iodide, one of the well-known alkaloid reagents, is employed. This reagent may be prepared by dissolving freshly precipitated subnitrate of bismuth in a hot, concentrated solution of iodide of potassium, to which a little hydrochloric acid has been added. The method of performing the test is as follows:—Acidulate the urine, or other fluid to be tested, with hydrochloric acid, being careful not to add too much or too little acid. (Just enough acid should be added to prevent the formation of a precipitate or any turbidity when a drop or two of the reagent is added to an amount of water equal to that of the urine to be used in performing the test.) Then add an excess of the reagent, which precipitates any albuminous substance or sulphide present in the urine, filter, to the filtrate add an excess of liquor potassæ, which throws down a white precipitate of the hydrate of bismuth, and boil. If the slightest trace of sugar is present, a black precipitate of metallic bismuth will be formed. The only precautions to be taken in performing this test are to be sure that the liquid is boiled sufficiently, since in the presence of a small amount of sugar the reduction takes place with some difficulty, and secondly, to avoid the presence of too large an amount of the white hydrate of bismuth before boiling, since it might obscure the detection of a small amount of the black metallic bismuth after boiling. If, by chance, too much is present, it can be allowed to settle, and the supernatant fluid decanted into another test-tube, permitting only a small amount of the precipitate to flow in with it. The bismuth test for sugar is, without doubt, the most delicate, but it is rarely used on account of the error which may be caused by the presence of a considerable amount of mucus or other albuminous substance in the urine. By the removal of this objection, as in the above process, it is much more delicate and certain than the copper test for detecting the presence of small amounts of grape sugar in the urine —*Boston Med. and Surg. Jour.*

ON THE CONTRACTION AND INNERVATION OF THE SPLEEN.

DR. JOHANN BULGAK records, in the *Centralblatt* of the 12th August, the results of his observations on this subject. His experiments were made on dogs, narcotised by intravenous injections of morphia and by chloroform. The spleen was exposed by an incision in the linea alba, joined by one extending at right angles towards the left side. Suitable precautions were taken to avoid hæmorrhage and drying or cooling of

the exposed viscera. Of the nerves which surround the splenic vessels, some are centrifugal, others centripetal. Section of the former causes a localised swelling and cyanosis of the spleen. Section of the centripetal nerves is without effect. Irritation (by weak induction currents) of the central end of a centripetal nerve produces general contraction of the spleen, and signs of pain. Irritation of the central end of a centrifugal nerve is without result. Irritation of the peripheral end of a centripetal nerve is without effect. Irritation of the peripheral end of a centrifugal nerve causes contraction of that part of the spleen supplied by the nerve operated upon. When the electrodes are applied directly to the surface of the spleen, a contraction, limited to the part between the electrodes, is noticed. When the spleen contracts, the surface becomes pale and granular, and the organ becomes smaller, firmer, and of a slaty-gray colour. When the irritation ceases, the surface becomes again red and smooth, and the normal condition is gradually restored. A series of observations were made on the blood leaving the spleen, in order to see how the number of white corpuscles were influenced by the different conditions of the organ. It was found that the number was at its maximum when the spleen was in its usual uncontracted condition; that it diminished during contraction, and fell to a minimum when the organ was swollen. If, however, a previously swollen spleen was made to contract, then the number of white corpuscles in the blood of the vein increased considerably. The contraction of the spleen is influenced by several circumstances—1. Curara, or a long-enduring or profound narcosis, enfeebles it. The spleen becomes flaccid, blue, and at last loses altogether the power of contraction. 2. Injections of quinine into the veins produces a contraction of the spleen, and an increase of white corpuscles in the blood of the splenic vein. 3. *Secale cornutum* is without effect even in doses sufficient to produce violent contractions of the blood-vessels, and of the intestine and uterus. 4. Suffocation causes general contraction of the spleen, and of the vessels throughout the body. 5. Irritation of the central end of the cervical vago-sympathetic trunk, or of the superior laryngeal nerve, causes contraction of the spleen, but this is due to the disturbance of respiration caused by the experiment. 6. Irritation of the semi-lunar ganglion causes strong and generalised contraction of the spleen. 7. Atmospheric air has no effect on the spleen if cooling and evaporation be avoided. By irritation and section of the spinal cord at different heights, it was found that the reflex and motor centre of the spleen lies between the first and fourth cervical vertebræ—that below the fourth vertebra only the conducting centrifugal and centripetal nerves run. These observations refer only to the nerves of the muscular tissue of the spleen itself (capsule and trabeculæ), not to those of the splenic vessels. In how far these are distinct in their origin and course from those of the spleen tissue, is not quite clear. All the

splenic fibres, centrifugal and centripetal, run in the greater splanchnic nerve on the left side. Irritation of the peripheral end of this causes a strong and long-enduring contraction. Irritation of the dorsal spinal roots on the left side, from the third to the tenth, causes distinct, although feeble, contractions. Irritation of the roots above the third, or below the tenth, is without effect.

J. M. P.

SALICYLIC ACID FOR OFFENSIVENESS OF BREATH AND EXPECTORATION.

DR. DA COSTA (*Medical and Surgical Reporter*) prescribes salicylic acid—five grains, dissolved by means of a drachm of glycerin in half an ounce of water, taken three times a day—in cases where the breath or expectoration is offensive. If internal administration does not accomplish the desired result, it can be used with the atomiser in a solution of similar strength.

REMARKABLE CASE OF CRANIAL INJURY FOLLOWED BY RECOVERY.

DR. J. P. GRAY, Medical Superintendent of the State Lunatic Asylum, Utica, New York, in a paper on the "Reparation of Brain Tissue" which appeared in *The Medical Journal of Insanity* for April, 1876, quotes the following extraordinary case, the particulars of which are given in full:—E. T., captain of a canal boat in Pennsylvania, while passing under a bridge, when lying on the deck asleep, was struck in the head by one of the suspension rods projecting below the timbers; the result of this was the fracture of the skull and face, with complete separation and tearing away of the following bones—a portion of the malar, some fragments of the frontal, and the entire right parietal detached from its fellow along the sagittal suture, and from the occipital along the lambdoidal suture, or perhaps taking with it some portion of the occipital bone, together with the squamous portion of the temporal. It was as clear of soft parts as if it had been removed from the dead subject with scalpel and saw. The man after this injury had no urgent symptoms, was clear and collected, suffered but little pain, and retained perfect power over all his mental and physical functions, the effects of loss of blood only being visible. The soft parts were brought together carefully by sutures; and although for a little time some hæmorrhage occurred from the wound when any movement was made, and free suppuration afterwards followed, granulation sprung up on the membranes, and eventually recovery from this fearful injury took place. This case was originally reported by Dr. Rutherford and H. Seaman, the latter of whom sent the parietal bone (a photograph of which illustrates the paper) to Dr. Gray. As regards the extent of the bone removed and the result in recovery, this case closely resembles the almost equally remarkable one published by Dr. Hayes, of Tralee, in *The British Medical Journal* for December 25th,

1875, in which the entire left parietal became exfoliated, carrying with it the scalp, recovery ensuing by the springing up of granulations on the dura mater.

R. A.

EMPHYEMA AND THORACENTESIS.

IN answer to a series of questions as to the treatment, causes, and sequelæ of empyema, Dr. Bowditch, of Boston, states that, although he cannot give the percentage of recoveries in his practice, he has up to this time performed thoracentesis 328 times, on 207 patients, and that none of his patients have died immediately, or in consequence of the operation. He explains the large number of deaths after the operation, in Europe, by the desire of the operators to do too much, and thus prolong the operation beyond the time proper for the patient. They desire to get out all the fluid that can be drawn. His own rule is to stop suction the moment the patient begins to suffer from *any uncomfortable* symptoms—stricture of the chest, severe harassing cough, &c. A mild cough is a favourable sign, as it indicates expansion of the lungs. This rule applies to all cases, whether serum, pus, bloody or fœtid fluid be found in the pleural cavity. Dr. Bowditch asserts that nearly all children with empyema recover after thoracentesis. Adults with recent trouble are in a more favourable condition for recovery than when the disease is chronic. Sometimes after repeated operations phthisis is liable to set in. In such a case the repeating of the aspiration is a bad mode of proceeding. It is better, if after aspirating once, or at most twice, a constant tendency to the reaccumulation of pus is found, to make a free and permanent opening. This may be made by means of a trocar and canula just large enough to admit the passage of a drainage-tube. Shorter canulas must be substituted for the one originally used, according as the cavity diminishes in size. A free incision is more painful, but is the better operation of the two. With regard to the subsequent treatment, as long as laudable pus is being thrown out, and the lung is expanding, and the patient is improving, Dr. Bowditch does nothing. He thinks that patients are often made worse by too much "washing out the cavity." If, however, the patient fails, has hectic, &c., he uses injections of warm water, which often produce the happiest results. He has not used carbolic acid, but thinks that it may be useful. Constant drainage is his rule. Where the fluid drawn is serous he prefers repeated aspiration to a permanent opening. If the serum be bloody at the first operation he never makes a permanent opening, for the case is then one of malignant disease. Empyema may occur in persons previously healthy, but a bad constitution is often at the bottom of the matter. As sequelæ, Dr. Bowditch has never met with Bright's disease or enlarged liver, but has met with tuberculosis and enlargement of the heart in a few cases. In these last

cases, though the fluid did not reaccumulate, the lung never regained its free expansion, and after months of trouble the patients died suddenly with cardiac symptoms.—*Cincinnati Lancet and Observer*, June, 1876, and *N. Y. Med. Rec.*

THE USE OF THE OPHTHALMOSCOPE IN INSANITY.

DR. JEHU, of Leigburg, has recently published a series of ophthalmoscopic observations made on 153 cases of different forms of mental alienation, with the following results:—40 cases of melancholia, 17 of mania, 14 of monomania, 19 of dementia, and 16 epileptics were examined, and the anomalies discovered were quite independent of the brain lesion, and included myopia, floccular opacity of the vitreous, alteration in visual accommodation, &c. The ophthalmoscope did not reveal any lesion characteristic of any one or other form of mental derangement, but in a small number of cases a common lesion, affecting the circulation of the papilla and retina, was found concomitantly with a congestive state of the head. Thus, in four cases of melancholia, with intermittent congestion of the head, the posterior plane of the eye participated in the congestion; it was red, the vessels engorged, the veins sinuous and more dilated than the arteries. In these cases the pupils were dilated. The same appearances were found in a maniac and two monomaniacs during a period of intense congestion of the head. The examination was entirely negative in demented and epileptics, except in the case of one demented who presented atrophy of the optic nerve, contrary to what has been asserted by Kostl and Kiemetschek. Whenever inequality of the pupil existed it did not indicate any pathological condition of the fundus oculi. In forty-seven general paralytics examined, M. Jehu has found atrophy of the optic nerve four times at both sides, and three times at one side; eight times the atrophy showed itself by a white coloration, with diminution and contraction of the vessels. In all the cases, with the exception of four, the examination showed that the atrophy comes on early in the disease, but not sufficiently so, however, to aid in the diagnosis at the period before there is any appreciable anomaly of the faculties. The optic atrophy and the cerebral *ramollissement* are not developed co-equally. The inequality of the pupils observed in the generality of cases does not count as a point in the march of the atrophy. Amongst the forty-seven paralytics observed, the state of the pupils did not corroborate the assertion of Allbutt, that after the contraction of the pupils the development of the atrophy and dilatation was slower. There is nothing stated as to the relation between the development of the atrophy and the different paralytic accidents of the side of the face, the tongue, &c.—*Annales Medico-Psychologiques*, March, 1876.

R. A.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XII.—*A Case of Empyema, complicated by Pleural Fistula, treated Successfully by the Antiseptic Method of Lister.* By EDWARD H. BENNETT, M.D.; Professor of Surgery in the University of Dublin; Surgeon to Sir Patrick Dun's Hospital; &c., &c.

IN writing the title of this paper I have used the terms "Antiseptic method of Lister" to avoid the criticism likely to be made by the opponents of this method, to the effect that antiseptic treatment of empyema and of pleural fistula is no novelty. A long list of substances used as antiseptics in the treatment of this disease could be made out, dating, according to some authorities, as far back as the time of Hippocrates. In more modern times the chlorides of sodium, mercury, and of lime, and, lastly, the solution of iodine and iodide of potassium, have all been used, mainly with a view to altering the character of the fluid furnished by the pleural cavity by their antiseptic action. The method of treatment adopted in the case which I now report avoids the risks which attend injections of the pleural cavity, and, as its result in this case proves, can attain their object, and lead to a successful issue. I include in the account of this case under the term "method of Lister" the modification of the antiseptic introduced by Thiersch—namely, the substitution of salicylic for carbolic acid, and its combination with it. Before entering on the details of my case, I

must quote a passage from the report of a similar trial of antiseptic treatment recorded by Dr. E. Markham Skerrett, in *The British Medical Journal*, July 22nd, 1876, as, although his case is one of empyema without fistula, treated from the first antiseptically, and so far more suitable for antiseptic treatment than mine, and his method has been Lister's unmodified, still our results are alike, and our conclusions, formed independently—as the dates of our observations show—agree.

Dr. Skerrett writes as follows:—"There have been, I believe, not more than three or four cases recorded in which Lister's antiseptic method has been applied to the treatment of empyema; and I cannot but think that its more extended use would result in substantial evidence of its value. My object in relating the details of this case is to call attention specially to the antiseptic treatment of this disease, and to point out what appear to me to be its peculiar advantages."

I shall presently quote Dr. Skerrett's conclusions, in order that my readers may judge how far they are supported by the facts of the following case:—

A young gentleman, a student of medicine, aged twenty-three, of strong constitution and build, an expert oarsman, suffered the following unfavourable series of illness, all in great part the results of his direct exposure to infection while resident in hospital. First, in 1873, an attack of scarlatina; in May, 1874, typhoid fever; subsequently, in December, again scarlatina, with rheumatic complications; lastly, in May, 1875, a sudden attack of pleuropneumonia, which terminated insidiously in empyema of the right side.

On September 15th, 1875, his pleura was tapped with an aspirator, and thirty ounces of sero-purulent fluid were withdrawn. On September 29th, the fluid having again collected, he was again tapped, and fifty ounces of similar fluid were withdrawn.

On 13th October, without any improvement having taken place in the general condition, the right side of the chest being greatly distended, a superficial abscess was observed pointing over the true ribs in the line of the anterior axillary fold. On the next day this abscess burst; and on the next, the fluid contained in the pleural cavity escaped through the external abscess. Three days afterwards, an attempt was made to introduce a drainage tube into the chest, through the opening of the abscess, but without success. Some inflammatory reaction followed this attempt, and appeared to

cause a closure of the passage into the chest. At all events the discharge ceased, and an appearance of pointing at the seat of the second aspirator puncture was noticed. This, however, did not occur, and the matter again, after a few days interval, recommenced to flow at the first opening. From this date until the middle of January, 1876, the fistula, which passed obliquely through the chest-wall upwards and forwards, discharged with occasional interruptions and was horribly fœtid. So intense, at times, was the fœtor, that it penetrated the entire house; and the patient himself devised a means of controlling it to some extent, by receiving the fluid as it flowed in a small tin vessel attached to his side, filled with chlorinated lime. On 20th January, I saw the patient for the first time during this illness, at the request of Dr. Gordon, whom I met in consultation with Drs. M'Dowel and Harvey. We agreed as to the necessity of attempting to control the discharge which the patient's condition—one of advanced hectic—clearly indicated could not be much longer borne. The indications were evidently the establishment of free drainage, and, if possible, a modification of the quantity and quality of the discharge. It was agreed that at first we should attempt this by antiseptic dressing, more particularly as a favourable opportunity seemed to offer for the success of this attempt in the fact that the fistula had almost ceased to discharge for some days, and the odour of decomposition was consequently absent. The treatment was from this date entrusted to me. The right side of the chest was enlarged, measuring fully two inches more in circumference than the opposite; the intercostal depressions were absent; in the neighbourhood of the fistula, which was placed between the fifth and sixth ribs in the line of the anterior axillary fold, the side bulged out excessively. The entire side, except in the infra-clavicular region, was dull on percussion. In this position respiratory murmur could be heard over a small area; and again, along the spine posteriorly, a narrow line could be traced between the scapulæ, between which and the spine on the right side respiratory murmur could be heard. A difference of opinion existed as to the origin of the respiratory murmur heard in this position, equally divided between the views that it was communicated from the sound side, or due to the presence of a narrow strip of lung capable of respiration, still existing on the diseased side. The result of the case, I think, demonstrates that the latter was the correct interpretation. The left lung was resonant throughout, and gave evidence of increased action in the harsh puerility of its murmur.

The patient's condition, otherwise, is sufficiently described by the statement that he was suffering from marked and progressive hectic, with considerable cough, but that as yet there did not appear to be any secondary visceral lesion established. The liver was not enlarged, and the bowels tended to be constipated. Troublesome diarrhoea had existed, but was then controlled. The difficulty of breathing, during any exertion, even that of sitting up, was extreme, so that it appeared to be necessary to avoid any course of treatment which might entail any serious disturbance. In the hopes of being able to avail myself of the temporary closure of the fistula, and of the check to decomposition resulting from it, in order to commence the antiseptic treatment, I carefully applied a large carbolised gauze dressing on the morning of the 20th January, and deferred any attempt to open the fistula until later in the day. Late in the afternoon I removed the dressing, and under the spray introduced a tangle tent through the fistula and secured it. The tent was introduced with some difficulty at 9 p.m., and entirely filled the opening, so that no fluid escaped. I selected a late hour in the day to introduce the tent, as I expected that its expansion would give distress, which could be best borne for a sufficient time under the action of the patient's usual evening opiate. Next morning I found that the tent was not causing any annoyance, and that the dressings were not marked by discharge. In the afternoon I changed the dressing, and found that the tent was fully dilated and sufficiently loose in the fistula to allow of its easy extraction. On removing it, while the patient lay horizontally, a considerable flow of matter free of putrescent odour escaped, and a large sized drainage tube was readily introduced. The flow, after the tube was in place, was not nearly as free or as copious as I expected; however, as the patient appeared much distressed by being raised to the sitting posture, and as I was satisfied that the tube was fairly placed in the pleural cavity, I secured it, and completed the antiseptic dressing. Next morning the discharge having escaped from beneath the dressings, I changed them and readjusted the tube. The dressings were flooded with discharge; a sheet folded many times beneath the patient was soaked through, and his body lay in a perfect flood of purulent fluid. This discharge had taken place suddenly in the early morning. I changed the dressings, and found now that the air freely entered the chest cavity while the wound was exposed under the spray. I feared that with so copious a discharge, even with the dressings changed morning and evening, a failure of the

antiseptic process would occur; that in fact all carbolic acid, which the dressings contained in their dependent parts at least, would be washed out by such copious discharges. Having already satisfied myself of the efficiency of salicylic acid as an antiseptic dressing, I determined to combine it with the carbolic treatment, with the object of saturating the discharge as it flowed, with a non-volatile antiseptic. In effecting this object it fully answered my purpose. For some days, while the discharge, though diminished, flowed at times so freely as to saturate everything placed beneath the patient, still no odour of decomposition could be detected; and the most remote parts of the folded sheet, which showed stains of the fluid, at the same time readily answered to the test for salicylic acid, the colour of a drop of a dilute solution of perchloride of iron at once changing to purple as it fell upon them. The mode of application of the acid was simply a pad of jute prepared after the method of Thiersch, of three per cent. strength, applied over the wound and drainage tube, and secured by having a Lister's eight-fold gauze and waterproof dressing bandaged outside it.

In three or four days the discharge was greatly diminished, and the patient's general condition appeared much improved. A check in the progress now occurred; irregular rigors, evidently attributable to some complication, not elements of the hectic, which was tolerably regular in its character, affected the patient, along with some ill-defined distress in the pleural cavity. The tube continued to discharge pus regularly, and of unaltered quality. These symptoms were suddenly relieved one day by a large escape of fluid, and at the same time a large area of the chest became suddenly tympanitic on percussion. This area was placed above the level of the fistula, and in front of it. The bulging of the chest-wall which was most marked in this position previously, subsided after this second sudden escape of fluid. I cannot explain these phenomena except by the supposition that a part of the pleural cavity was shut off originally or subsequently to the evacuation of the larger cavity by some accidental septum; that the tension of this cavity gave rise to the irregular constitutional disturbance, and that its relief was the result of the sudden flow of fluid. Whether this be true or not, the patient rapidly mended in health, and the discharge, still large in quantity, became a clear serum, and so continued up to the end of March. Any slight derangement of health altered its quantity—even the introduction of a new drainage tube caused slight increase and slight change in transparency of the

fluid, but at last the amount seemed to be nearly constant. The chest-wall had ceased to bulge, and respiratory murmur became audible over the greater part of the side, extending gradually outwards and forwards from the spine and from below. The area, which I have observed as probably corresponding to the encysted portion of the pleural cavity, retained its tympany, however, unaltered. The larger amount of discharge I now collected from the tube, while the patient sat up and stooped forward. The amount so collected was, for over a month, six to eight drachms at each dressing; this, at the end of March, fell to four, but below this it seemed disinclined to fall. Only a very small quantity stained the dressings. The patient's health at this time was excellent; he had lost all hectic; his appetite was good, and he slept well; confined strictly to his room, and chiefly to bed, for fear of any exposure during the extremely harsh weather of the last spring, he fattened excessively. He could not, however, make any exertion without considerable distress of breathing, and a subsequent increase and alteration of the fluid discharged from the fistula.

During all this time the dressing with carbolic spray, salicylic jute, and carbolic gauze, was carefully continued, and during each dressing the cavity, emptied under the spray, was filled with air drawn in to replace the fluid as it flowed—*injected*, in fact, with dilute carbolic acid in the state of spray. It occurred to me now, as the discharge remained obstinately at a fixed quantity, but little escaping into the dressings, and most collected from the tube, that two causes co-operated to delay the progress—the inability of the lung to expand in consequence of its previous compression and adhesions, while the chest-wall, though falling in, was necessarily, from the patient's age and build, unable to do so rapidly; and secondly, a condition of inaction of the walls of the cavity, a result commonly observed in the too prolonged use of carbolic acid, or indeed of any other substance applied to granulating surfaces. I met the latter by substituting the spray of salicylic acid for the carbolic, so as to change the application to the pleural surface, for only by the spray in-drawn during the dressings was any substance, except the air filtered through the dressings, brought in contact with the surface. A marked change for the better occurred with the alteration of the spray. The fluid was reduced to four, three, and on 26th March to two drachms, and the dressings were now changed only every second or third day, while the patient moved about his

room, and even down stairs. The harsh weather alone prevented me from allowing him to go out. I was prevented from any attempt to remove the tube by the knowledge of the existence of a large cavity still open in the pleura, as proved by the percussion, and by observing the quantity of air that bubbled through the opening at the dressings. The risk attending any attempt to close the fistula by withdrawing the tube was clearly demonstrated by an accident on the 18th March. The tube, shortly after a change of dressings, while the patient moved about, slipped out of the fistula, and remained out for a day and night, when he felt distress, and sent for me. By this time he was confident that the tube had slipped or become blocked, as he was unable to hear or feel the air passing through it. On its re-introduction a moderate accumulation of fluid—in all about six drachms—flowed, and, as it appeared unaltered in character, I did not anticipate any bad result. However, in the afternoon a violent rigor came on, and he spent a miserable and restless night. The next morning I found him in pain, and looking very ill, with a hot skin. I dressed the wound, but still found no change in the character of the fluid, which was reduced to the normal quantity. I could not lay my hand on the immediate cause of the fever, although its exciting cause was evident enough. The next day the solution of the difficulty was no longer doubtful. The fluid now became purulent, and in quantity again about six drachms. With this an immediate subsidence of the fever and pain showed that the suppuration, the result of the tension, acted as a critical discharge. Now, for the first time, a distinct "leather-creak" sound was developed in the cavity, audible to the patient, and accompanied by a coarse grating vibration, palpable to the hand laid over the chest. These phenomena lasted for two or three weeks, gradually subsiding, and capable of being elicited at last only by forced respiration. In the end of May the patient went out daily, and required dressing only twice a week—in fact, only when the tube became filled by dried secretion.

In the month of June the cavity appeared obliterated, and respiratory murmur could be heard all around the fistula, while the chest wall had fallen in, so as to measure at the level of the fistula two inches less than the opposite side; at the same time the harsh respiration of the sound side had given place to a more normal murmur. On June 20th, after consultation with Dr. Gordon, who constantly watched the progress of the case with me,

I removed the tube, directing the patient to keep quiet for a day or two. No disturbance of any kind followed, and the fistula has closed permanently.

In the paper by Dr. Skerrett, to which I have above referred, the treatment by the antiseptic process is contrasted with that by injection of the pleural cavity in the following conclusions.

The advantages of the antiseptic treatment are these:—

1. A free discharge is allowed.
2. Decomposition and consequent absorption of the products of putrefaction are prevented.
3. The treatment is very much less disturbing and exhausting to the patient, both because the process itself is much simpler, and also because it is less frequently repeated.
4. There is no irritation of the pleura.
5. One, and perhaps the chief, cause of sudden death during the after-treatment is avoided. In a word, by the application of the antiseptic method to empyema we are enabled to secure all the advantages of a free opening, without any of its disadvantages.

In the same number of *The British Medical Journal* Mr. Bell advocates "the free incision in empyema *versus* the aspirator," and his cases support the views expressed above as regards the necessity for free discharge as essential to antiseptic treatment. I cannot but think that it is safer to rely on efficient antiseptic dressings rather than trust to free discharge and poulticing combined, with or without occasional antiseptic injections.

Before closing this paper, it remains merely to draw attention to a point in which the case I have recorded presents exceptional features in comparison with the ordinary cases submitted to antiseptic treatment. I found that it was necessary that the air should be allowed to flow freely in and out of the pleural cavity with each act of respiration during the entire period of treatment, a condition not present in any other wound I have treated on this plan, and one which tests to the utmost the powers of the antiseptic used. In the early part of the treatment I applied very wide gauze dressing, secured by a few turns of a broad binder. Subsequently, when the discharge threatened to wash away the carbolic acid by its excessive flow, I added a pad of salicylic jute to provide an antiseptic which should be capable of saturating the discharge as it flowed through and outside the bandages. Subsequently, I gave up the use of carbolic acid spray, to change the character of the application to the pleural surface; and lastly, as the

gauze, worn for a long time on the skin outside the pad of jute caused irritation and severe itching, I substituted for it cotton wool, in the unbroken sheet, saturated with salicylic acid, secured to the side by having ordinary soap plaster spread around the edge of the piece. In this way I was gradually led, as the case progressed, to use only the preparations of salicylic acid in the dressing, and these were constantly worn during the termination of the case, while the patient moved about the house, and lastly walked and drove in the open air. During the entire treatment no trace of decomposition or of fætor occurred. The pad of jute, prepared after the method of Thiersch, with, on its outside, either a carbolic gauze dressing or an unbroken sheet of cotton wool, charged with salicylic acid, provides a perfect filter for the air necessarily drawn through it into the chest—a property due largely to the moist condition of the jute, in consequence of its being prepared with glycerine. The original object of the addition of the glycerine in such quantity as to keep the fibres moist (4 oz. to 1 lb. of jute) was to prevent the crystals of the dry acid flying off the jute in dust as it was handled; but I am confident that the glycerine fulfils the further object I have stated, rendering the jute a perfect air filter. A trivial, but still not entirely unimportant point, I have learned also in the management of this case—namely, a ready mode of fixing the drainage tube in such a case, where but one small opening exists, and the risks of escape of the tube either into the cavity or completely out of the opening, as is liable to happen with the constant respiratory and other movements, must be avoided. After various plans had been tried, I adopted, as the readiest and most manageable, a single piece of salmon fishing-gut, carried as a suture through the tube at right angles to its axis, and cut off a couple of inches from the tube at either side. A little piece of isinglass plaster fixes each whisker, as one may name the ends of the gut, to the chest-wall, wet with the spray, and retains it perfectly; the gut is stiff enough to keep the tube adjusted without galling the side, as a wire suture would; and, on the other hand, it does not conduct the discharge to the plaster as silk or thread does, and so prevents its softening and the consequent slipping of the fastenings. The tube was removed and the fistula closed in this case on 27th June last; and a sufficient interval, over three months, has now elapsed to justify me in stating that the cure has been permanent; the patient can walk and ride without distress, and has even put his cure to the test by being upset out of a boat into the sea, without ill effects.

His side has fallen in, and the liver has risen considerably in level; but he thinks that his side is again gaining something of its dimensions, more even than is due merely to recovery of power in the muscles; and the respiratory murmur has returned, even beneath the scar of the fistula.

Dr. Gordon has favoured me by reading the proof of this paper, and kindly furnishes me with the following confirmation of its details and statement of the patient's present condition:—

“I have perused the above case very carefully, and can testify to the accuracy of the details and the efficacy of the treatment. The patient was under my care for a very considerable time, labouring under a pleuro-pneumonia, followed by extensive effusion; and, although I advised the introduction of a tube into the pleura in September, the difficulties interposed were so many that the patient was in almost a hopeless state when Dr. Bennett saw him in January. I met him casually at the house of a relation about a fortnight since, and can testify to his being now in the most perfect health.—S. GORDON.”

ART. XIII.—*The Diseases which Prevail among Workers in Flax.**

By CHARLES DELACHEROIS PURDON, A.M., M.B., Dub.; F.R.C.S.I.; Certifying Surgeon, Belfast District; Senior Physician, Belfast Charitable Infirmary; &c.

THE different processes that flax has to go through before it is made ready for clothing our persons or adorning our houses cause certain diseases in those that are employed in its manufacture, but one of the most injurious, and in certain branches very fatal, is the effect induced by the inhaling the flax-dust—called by the workers, “Pouce”—which is produced when the fibre is cleansed by machinery from the decayed wood and earth that had adhered to it in the steeping pools. This is given off largely in the scutch mills, where it is inhaled by the scutchers and those employed at the rollers through which the straw is passed; these workers suffer so much, from the effects it produces, that it is well for them there is an interval always between the seasons of their employment, during which time they are engaged in country work; this serves to partially repair the damage done to their lungs; not so with the

* Read before the Annual Meeting of the British Medical Association at Sheffield, August 10, 1876.

flax dressers (roughers and sorters), who are constantly inhaling the dust; the roughers who prepare the flax as received from the scutchers suffer, but the machine-boys, who receive it after being put through the preliminary preparation, feel the effect of its inhalation more severely, as they are younger, being in very numerous instances half-timers.

The injurious effect that this inhalation of pounce produces in the lungs begins to manifest itself oftentimes in a few months, but more frequently in a few years, a good deal depending on the constitution of the individual; the first symptom is a sensation of dryness in the throat, which becomes inflamed, the inflammation creeps gradually downwards, as one told me, he felt his "windpipe becoming dry," thence into the lungs, soon bringing on the attacks of cough and dyspnoea, which seize them, especially in the morning and at night. In severe and well-marked attacks, the paroxysm of cough and dyspnoea lasts for a considerable time, and does not pass off until the contents of the stomach are ejected, and often blood is spat up. During this period the worker seizes any article that may be near, in order to enable him to get over the attack more easily; in the case of a machine-boy suffering from a severe paroxysm whilst at work, the table at which he is engaged is caught with both hands, and when thus observed by his companions he is said to be "poucey." In a great number of instances the lad is obliged to leave the mill, and seek for employment in healthier trades; but still, in cold weather, he suffers from cough and shortness of breath, and in many cases his life is terminated by phthisis. The number that died of phthisis in one year, during the time they were in the factory class, was six per mill, but as numbers linger out a diseased existence in other callings, only to terminate in death, far more than six per mill get the seeds of their death in the machine-room of a mill. At seventeen years of age, should his health be such as would enable him to continue working, he either becomes a rougher or sorter, and these two classes generally suffer from frequent attacks; when about thirty years of age their appearance begins to alter, the face gets an anxious look, shoulders become high—in fact, they become prematurely aged, and the greatest number die before forty-five years; many, as in the case of the machine-boys, are compelled, through chest affections, to seek for other means of support, so that it is a very rare occurrence to see a hackler over sixty years of age, that has always been employed as such. In my mortality tables the deaths from

phthisis and chest affections were 11·1 per mill. in one year; but, as mentioned before, a great number that had the seeds of the disease having left the mill, and died in other callings, makes the death-rate, from inhaling the dust, far more, really, than the return shows. Though not exactly included in this paper, I cannot avoid mentioning that this affection of the lungs that the flax dressers suffer so much from, is so well known to the army surgeons that they have forbidden the recruiting sergeants to enlist any from this department. But the class that suffers most from inhaling the dust is the preparing and carding; in this females are almost exclusively employed; these suffer in the same manner as the males, but in a far more aggravated degree. I need only mention one case in order to enable you to understand that the sufferings of some is very great, and that it is not strange they fly to whiskey for temporary relief. The patient (a woman) is forty years old; commenced to work at fourteen; after a few years her throat became dry, and she felt herself to be "choked up;" suffered also from headache; then attacks of cough and dyspnoea began to come on every morning and night; these attacks lasted for half an hour at a time; now, when they come on, she has to lie across one of the "cans" in order to get relief, and the paroxysm does not cease till she throws off the contents of her stomach, and sometimes blood; has to get up at five o'clock in the morning in order to be dressed in time for the mill at six, as she is often obliged to stop on account of the paroxysm coming on, and it is not surprising that in this department the death-rate in chest affections is exceedingly high—in fact, exceeding that of the entire district from all diseases by 8 per mill.; but the most fatal part of the preparing is that in which the "long line or cut line" is spread, as the dust is so fine, and of such an irritating character, that it almost invariably produces lung-disease. I may mention that when formerly, at Mr. Baker's request, I made inquiries into the sanitary state of the workers, on asking a very clever manager of one of the mills respecting the health of this department, his reply was—"It is sure death." I may also mention that the workers hasten their deaths by the inordinate use of alcohol. Before leaving this class of workers, I cannot avoid stating that the dust from certain descriptions of flax is more injurious than others, and also that of the dust in certain departments. The Irish is far less irritating than the Dutch or Flemish, but the dust from the Pernau is the worst of all. The dust in the preparing-room, being finer, is worse than that in the machine-room.

I have had an analysis of the flax fibre made by Dr. Hodges, which shows that in 100 parts nearly 13 parts are silica. An ori-nasal respirator is worn by workers in the preparing-room; it is called the "Baker respirator," after one of Her Majesty's Inspectors of Factories, and has been found very useful. I have been able, through the courtesy of Mr. Baker, to obtain a drawing of a portion of the lung of a flax-dresser. [This drawing was exhibited to the meeting.] He died of pulmonary disease. It is magnified forty times. "He was forty years of age; there was no history of hereditary phthisis in this case, and the cough and other lung symptoms were justly attributed to the inhalation of flax, as, having at one time changed his employment, the symptoms had greatly subsided, but they increased again when he returned to a flax mill, and he eventually died with symptoms of severe pulmonary disease." It is a vertical section, showing the particles of dust adhering to the sides of the bronchial tubes and air cells. The photograph of the sorter [also exhibited] was taken from one of those employed in a mill, aged fifty-two. He was a machine-boy for five years, then a rougher for two years, after this he became a sorter. He sometimes began to feel a dryness in the throat, and a "stuffy" feeling; occasionally this sensation gradually crept down the trachea, when he became "real poucey." At this time he felt as if his neck was a drawing down into the chest, and his limbs beginning to get weak, the hands and forearms becoming stiff. This came on frequently until the last five years, when it became almost permanent. His appetite began to fail, and he lost flesh. Has now frequent attacks of cough and dyspnoea, becoming quite exhausted when the paroxysm is over, which frequently terminates in vomiting or expectorating a glairy mucus; during the time he is suffering has to place his hands on a table, or any other support that is near; the breathing and attacks are worse when the wind blows from the N.E., and in cold or damp weather. Physical signs:—Chest sounds dull on percussion, resonance of voice; respiration 30 in the minute, with expiratory murmur prolonged and audible. Pulse 80, weak. Another photograph is of a machine-boy, aged fourteen; chest dull on percussion, respiration 20 in the minute; respiratory murmur weak, with expiration prolonged; pulse 84; coughs frequently; has been three years in a mill.

Another department that has a peculiar disease, called by the workers "mill fever," is the spinning. This generally attacks raw hands, and comes on when they are at work a few days. The symptoms are rigors, nausea, vomiting, quickly followed by pain in

the head, thirst, heat of skin, &c. This state continues from two to eight days, when the disease subsides of itself. No treatment is required or sought for, as the worker knows that it runs a certain course, and will leave her comparatively well, though weak, and that she may return to work without any dread of having it again. The cause assigned for the attack is the smell of oil, along with the vapour and heat of the room.

Another disease is a papular eruption, that attacks the exposed part of the body. This I call lichen, and is caused by the action of the flax water on the skin of young persons and children. Adults are not affected by it. I may say that a certain description of Russian flax produces a pustular eruption, so like variola, that during an epidemic of it the medical attendant was almost deceived at first.

Those that are engaged in bleaching yarn, where it is boiled in a certain kind of lee, which is of an irritating quality, suffer from an attack of eczema of the fingers and hands of so severe a character that fissures are formed, and bleed frequently. The disease commences in twenty-four hours after they have been working, and in two or three days the pain is so great that they have to stop until the parts become healed.

Before concluding this paper, I wish to mention that I have been informed by medical men of large practice amongst the factory workers, that phthisis is always acute among those that are employed in the spinning department (which is wet), and chronic in the preparing (which is dry).

Such are the specific and peculiar diseases to which those who are engaged in the manufacture of linen are liable.

Analysis of the Flax Fibre, by Professor Hodges.

100 parts of the ash of flax straw had the following composition:—

| | |
|------------------------|-------|
| Potash, - - - | 20·32 |
| Soda, - - - | 2·7 |
| Chloride of sodium, - | 9·27 |
| Lime, - - - | 19·88 |
| Magnesia, - - - | 4·05 |
| Oxide of iron, - - - | 2·83 |
| Sulphuric acid, - - - | 7·13 |
| Phosphoric acid, - - - | 10·24 |
| Carbonic acid, - - - | 10·72 |
| Silicia, - - - | 12·80 |

99·31

ART. XIV.—*The History of a Bad Leg.* Part II. By THE OWNER OF IT.

"She had two bad legs and a very bad cough,
But the two bad legs—they carried her off."

OLD EPITAPH.

SOME two years ago * I published a short sketch of chronic rheumatic arthritis of one hip-joint, and its commencement in the other. As the disease has made decided progress since, I hope it may not be without interest to chronicle its advance.

But before I speak of special symptoms, I ought to mention that in July, 1874, I had an attack of ear-ache (gouty) with very high fever for a few days, from both of which I have suffered before; but from the effects of which I recovered very slowly. After this time other and more constitutional symptoms developed themselves, referable to the heart and the condition of the blood, of which I will say a few words before I conclude. So far did these uncomfortable symptoms proceed, and so much did they incapacitate me, that, added to the pain of walking and standing, it was determined, by the advice of friends, medical and other, that the time had come for me to retire from practice, and try what country air and absolute rest would do towards the mitigation of my ailments. So, "the bad legs—they carried me off." Of the amount I have gained by it, I will speak by-and-by. First, let me speak of the condition of the hips, and in the order observed in my former paper:—

1. *The Pain.*—Contrary to the late Dr. Adams' prognosis, the pain was not diminished, except, perhaps, when sitting on one chair with my feet on another. The stiffness on rising and the severe pain on standing or walking are worse—so much so, that sometimes I fear that my legs will "give way" and that I shall fall. I have also noticed that in warm damp weather I am worse, and at such times I have observed a curious reflex action—viz., that if I wear shoes that fit closely my whole leg from the hip down becomes painful and weary, and is only relieved by putting on loose slippers.

The increase of pain is by fits and starts. I may go on evenly for a week or two; then, without cause, will come a very bad day, and then having, as it were, established this new level, it goes on until it takes another start. The result is a permanent increase of

* Dublin Journal of Medical Science. May, 1875.

pain, more stiffness of limb, and less comfort and power of locomotion.

Up to a certain time I managed to 'hirple' along without a stick; then I found it necessary to use one indoor as well as out of doors, and now I cannot get out of doors without two sticks, with a prevision of crutches in the distance. Armed with two sticks even I cannot walk so far as I could last summer, and the distance seems gradually contracting. I may mention that I occasionally suffer from a pain in the left knee, not the ordinary reflex pain, but one accompanied by a spot of tenderness without swelling.

Practically—i.e., in walking or standing—the left leg is more than an inch shorter than the right. Without thought, I never stand equally on the two legs; and yet, measured from the fork or from the trochanter, the bad leg seems as long as the other. I do not see my way to explain this; it may be, as Dr. Adams suggested, that the plane of the brim of the pelvis is not level, the left side being unconsciously elevated more than the right. As it may have something to do with displacement, caused by the morbid deposit in the joint, by which the left trochanter has been made to protrude laterally two inches more than the right, it is quite clear that this displacement has destroyed the parallelism of the two femora.

2. *Locomotion.*—In my former paper I attributed the lameness simply to the pain of moving the joint and placing my foot on the ground; but I mentioned, as a curious feeling, that "I had no grip of the ground," and that it seemed as if a slight touch would upset me—I was, in fact, very nearly blown down by the wind, and felt that I had no purchase to enable me to resist and recover. That feeling has increased and developed into something more. For some time before Dr. Adams died I noticed that he not merely limped, but that he had some difficulty in keeping his balance; and I find that I have arrived at that stage myself. It is not giddiness, nor, so far as I can make out, any cerebral affection; when I stand still and shut my eyes I am perfectly steady, but not so when I attempt to walk. I should not like to say that it may not be owing to some condition of the spine and spinal nerves, but I have no special proof of this.

In thinking over this question of loss of balance or equilibrium, I asked myself what is meant by "balance," and upon what it depends. To take the simplest example possible:—A child of twelve or fourteen months old could yesterday walk with the aid of one finger, but was quite unable or unwilling to take

a step alone. To-day, in answer to the mother's coaxing, it starts off and walks a few yards steadily. Now what new power or new development of an old power, has it to-day that it had not yesterday? It is not an easy question to answer intelligently, nor could I find an explanation in any physiological work within my reach, until Dr. Carpenter was good enough to lend me a lecture he delivered in Glasgow,* from which I take the liberty of making the following extracts:—"You have all seen a child learning to walk. You know that it does not get upon its legs and walk all at once like a newly-dropped lamb; but that its muscles have to be weaned, and that this training is a very long process" (p. 21). "The act of walking requires a continual shifting of the centre of gravity, from side to side, so as to keep it over the base during every step; and it is this shifting from side to side that constitutes the great difficulty in the act of walking. Almost every muscle in the body is in action in the maintenance of our balance and in the forward movement. The muscles of the eyes even are in operation in keeping our gaze fixed on what is before us, and thus guiding our onward movement" (p. 22). "We now pass to the other part of our subject; the relation between the higher part of our nature—the eyes—and these automatic relations. What I shall endeavour to show you very briefly is this, that the whole of the nervo-muscular apparatus concerned in executing the mandates of the mind acts as a trained automaton. Anything we mentally determine to we will, as we say" (p. 24).

I hope it will not be without interest to inquire a little more minutely into the different powers thus co-ordinated to produce the result, "balance" or "equilibrium."

Let me first recall to the minds of my readers that of the various actions of the body some are purely *voluntary*, commenced, carried on, and terminated at our own pleasure. Others are purely *automatic*, begun, carried on, and terminated independently of our will. And a third class is *mixed*, beginning by an act of volition, but afterwards carried on automatically for the most part, yet controllable at any time by an act of volition. Sir W. Hamilton, in his Lectures (p. 355), when speaking of "acquired dexterities and habits," puts it thus:—"To explain these, three theories have been advanced. The first regards them as merely mechanical or automatic; thus denying to the mind all active or voluntary intervention, conse-

* Is Man an Automaton? A Lecture delivered in the City Hall, Glasgow, February 23rd, 1875.

quently removes them beyond the sphere of consciousness. The second, again, allows to each several motion a separate act of conscious volition; while the third, which I would maintain, holds a medium between these, constitutes the mind an agent, accords to it a conscious volition over the series, but denies to it a consciousness and volition in regard to each separate movement in the series which it determines."

Lord Blackford, in a valuable paper in *The Contemporary Review*,* has some excellent observations on these quasi-automatic actions, performed under the influence of habit. Speaking of the instance of Mr. J. S. Mill walking from his house to his office unconscious of all his surroundings, he says:—"And this is facilitated by the form of habit which enables body or mind to do with ease, and, therefore, with slight attention, what it is accustomed to do. Hence, the sensation and volition which dictate any particular act are liable to pass unobserved in proportion as the act is habitual or the attention intently directed to other objects. While mainly occupied with my thoughts I can copy papers, read aloud, walk in a garden, or perform any other easy and habitual act, requiring only a faint and uniform kind of attention." Again, "I think I have shown that the human mind can and constantly does receive and act on sensations without that distinct recognition which is sometimes called 'consciousness.' This happens under a variety of conditions, but particularly when the attention is strongly directed towards one object and away from others. The attention which still remains available for those others is apt, in such cases, to be reduced to the smallest amount which is necessary for effecting any undetermined operation. When the operation is one which habit has made immeasurably easy, this amount is immeasurably small; and when the attention to any sensation is immeasurably small, the hold of that sensation on the memory is immeasurably faint."

Between the automatic actions of the body and the semi-automatic movements of habit, there is this marked difference, that in the latter, the will may at any moment assume its dominant position, and especially so in walking. For example, when Mr. Mill walked through the Strand without seeing any one or being conscious of where he walked, if he had trodden on a loose stone and stumbled, or on a sharp one and been hurt, whilst he would have recovered his balance by the exercise of the reflex-motor nerves, he would, by an

* For September, 1875, p. 630, *et seq.*

exertion of the will, have sought to avoid such obstacles by keeping a better look-out.

After this introduction, let us examine a little more closely into these co-ordinating powers:—

1. There must be the normal development of bones, joints, and muscles, and the bones of the lower extremities must have their axes in the normal direction and with the usual parallelism, so that in the upright position the centre of gravity shall fall between the feet. It is quite clear that if the axis of the bones of one leg differs from that of the other, the centre of gravity will be disturbed and its preservation will require a special effort. And if the joints be not freely movable, their co-ordinating power will be modified or enfeebled.

Almost from the moment of birth, the education of a child's muscles commences, those of the upper extremities taking precedence of the lower. There are almost incessant movements of the arms and legs; soon an attempt to grasp a finger or to direct its own hands towards any object of desire; then attempts to stand, with frequent failures; but each failure the "promise and potency" of success in time.

2. I have said that, when standing upright and still, the centre of gravity ought to fall between the feet. In walking, a change of the centre of gravity must be made at each step, so that it may fall under each foot alternately, and the less the deviation from the original centre, the more graceful the walk. Contrast the walk of a Spanish or French lady with the roll of a sailor, or the straight sharp walk of a hen with the waddle of a duck. In the case of the sailor and the duck, the base is so much wider that the transference of the centre of gravity involves moving the whole body from side to side, so as to bring the centre of gravity over each foot successively, in order to avoid a fall. This transference is, at first, a voluntary act, but the power of doing it easily and quickly is the result of education and practice; but not till it has been acquired can the child walk by itself, and then it becomes automatic.

3. The communication between the outer world and the spinal system, by means of afferent and efferent (sensitive and motor) nerves, must be in a normal condition, or the power of steady walking will be imperfect. When once the habit of walking has been acquired, so as to be almost or quite automatic, and especially when the attention is otherwise strongly occupied, it is upon the report of these different nerves that the steps are regulated. Stones

or other obstructions, sloppy or boggy places, are at once perceived, and changes of direction in stepping or re-arrangements of the centre of gravity are made almost unconsciously.

4. That the eyes have more to do than has been supposed, with the maintenance of equilibrium in walking, both as to the end to be aimed at and as to the direct mode of attaining it, I am quite satisfied from personal experience. A very simple experiment will show this. Let any one stand at one end of a reasonably large room, and try to reach a door at the other end with his eyes bandaged, and he will find that three times out of four, he will deflect from the straight course and find himself on one side or the other of the object aimed at. So if you wish to keep a straight line within narrow limits—or when a sailor “walks a plank” on a test of sobriety, for example—the use of the eyes is absolutely essential. Again, if you watch a child soon after it has learned to walk, two conditions are quite remarkable—viz., the rigidity of the muscles of the body and the fixedness of the eyes. I once saw Bloudin traverse a tight rope stretched across the terrace of the Crystal Palace, Sydenham, and the same peculiarities were strikingly evident. His eyes were (apparently) fixed immovably upon some distant object, and every muscle not employed in walking seemed as rigid as iron. That in ordinary life the use of the eyes in maintaining “balance,” which was a voluntary act at first, becomes really automatic, hardly needs proof, or if that were necessary, I might quote the instance of Lord Macaulay, who used to read a book whilst walking along the Strand without mischance to the rapidity of his pace.

5. It may seem to some very metaphysical to attribute to the will, the “crowning of the edifice,” the supreme determinant of progression; yet, if we think for a moment, it is so. It does much more than give the primary impulse to each voluntary act. Look again at the little child. Having acquired the free use and a certain command of its muscles; and his passing from chair to chair; the habit of changing the centre of gravity; the coaxing and encouragement of its mother at length induces baby to *determine* to start off alone—a great exercise of will. It may succeed the first time, but if it fail it will refuse for a while to repeat the effort of will, and its walking will be stopped until the will is sufficiently stimulated into action again.

The same supreme effort of will we find in ourselves, if the act of walking involve danger, as in crossing water on the trunk

of a tree, or a narrow plank, or a bridge like that at Carrick-a-Rede.

So much for the powers contributing to locomotion and the preservation of equilibrium. Now let us see how far these considerations enable us to explain the loss of balance in chronic rheumatic arthritis, and now I speak simply from personal experience:—

1. There is a considerable change in the hip-joint; the trochanter projects outwards at least two inches more than the opposite one; and the head of the femur *feels* as if held to the acetabulum by weaker bonds than usual. The result is that the axes of the femora are different, and a special voluntary effort is necessary to preserve and to change the centre of gravity. I have much less power over the left leg, and find it very difficult to rectify any irregular movement, and almost no power of resistance to a push or a blast of wind.

2. The irregular and unequal reflex action, in consequence of sudden pain along the sensitive nerves, and sudden involuntary movement, disturbs stability, and not unfrequently brings me in danger of falling from the diminished power of rectification left to me.

3. I am satisfied that of all the powers eyesight is the most essential. I could not walk half a dozen yards in the dark without falling, and in broad day-light I find it necessary to watch each step. If I wish to look about me, I must stand still. As, fortunately, my eyesight has been spared to me, it is a compensation for and not an aggravation of the hip-disease and its consequences, only that instead of the use of the eyes being an acquired automatic action, it has reverted to its voluntary origin, and is now always an act of will. I am pretty sure that this is also the explanation of the fact that I never trip—if I did I should certainly fall.

I hope the foregoing observations may be considered a satisfactory explanation of the term balance and of their applicability to explain the condition of balance and progression in chronic rheumatic arthritis. It only remains for me to say a few words, according to promise, upon some other deviations from health, and upon the effect of absolute rest and country air upon all:—

1. For a considerable time, I have known of the existence of a weak heart—fatty degeneration, I suppose, judging from a well-marked arcus senilis—but,

2. For six months before leaving town (twelve months ago), I noticed my face getting paler and paler, especially after any exertion

or excitement, and at the same time appetite and capacity of taking food very much diminished. I suppose the "white face" is the result of deterioration of the blood; and until I observed this, I had suffered very little inconvenience from the weak heart.

3. Then, however, I found the powers of voluntary existence greatly impaired, and it was followed by increased action of the heart and intolerable fatigue. I felt as though I should like to lie down and never get up again.

4. Some effect, as one might expect, was also produced upon the mental operations. I do not think that formerly it was deficient in will (some ill-natured people might, perhaps, complain of the reverse); but in the condition I have described, I found it very hard to exert much volition as to my own acts. It was very hard to decide to do anything requiring special exertion, and I began to suspect that there were other conditions than the hysterical, of which the most characteristic symptom is "I can't."

Under such circumstances, continuing in practice involved me in miserable difficulty; trying with great effort to do my duty, and conscious that I could not do it effectually, to say nothing of the bodily suffering it caused. I, therefore, made up my mind to retire from practice and to live in the country, and I do not regret it for a moment.

I have had absolute rest for a year, and, at least, my general health is improved; I have a good appetite, and sleep well.

Of the heart there is little to be said; I feel the effects of it in quickened pulse and hurried, even difficult, breathing sometimes; and by-and-by, of course, other consequences will follow, which, I trust, God will give me strength to bear.

Meantime, I have, and enjoy fully, the rest I longed for, as one has said beautifully:—"Rest here in the acquiescence in powers enfeebled, unequal to fresh enterprise, that have done their work and can undertake no more, save such strong quiet kindness as may come to us demanding to be done; rest here, in hopes of powers renewed, so that their exercise shall be once more a joy, such as it was to move or breathe in childhood."

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Treatise on the Diseases of the Nervous System. By WILLIAM A. HAMMOND, M.D.; Professor of Diseases of the Mind and Nervous System in the Medical Department of the University of the City of New York; President of the New York Neurological Society, &c., &c. Sixth Edition, re-written, enlarged, and improved. New York: D. Appleton & Company. 1876. 8vo, pp. 883.

ANY prefatory remarks we might make on a work like the present are rendered unnecessary by the existence of a tolerably comprehensive notice of the first edition of Dr. Hammond's book in the number of this Journal for April, 1872. Our duty, as reviewers, will, therefore, on this occasion, be most satisfactorily performed by an examination of those additions to the work which have been made within the last five years. But, besides this, it will be requisite to refer to a few points which escaped notice in our former criticism.

In the first place, the arrangement of the work is good. The "Introduction" describes the instruments and apparatus employed in the diagnosis and treatment of diseases of the nervous system. The remainder of the book is divided into five sections:—the first, dealing with diseases of the brain; the second, with diseases of the spinal cord; the third, with cerebro-spinal diseases; the fourth, with diseases of the peripheral nervous system; and the fifth, with toxic diseases of the nervous system. The last section is an entirely new feature, and we shall accordingly devote attention to it in the sequel.

In the section on "Diseases of the Brain," Dr. Hammond first treats of cerebral congestion, which is either *active* or *passive*. Active congestion, or that form in which there is an increase in the amount of arterial blood circulating in the vessels of the brain, is much more common than the passive form, or that in which the quantity of venous blood is augmented. Five-sixths of the author's

cases were of the active form. He recognises six varieties of cerebral congestion, designated from the chief feature characterising the attack, viz.:—the *apoplectic*, the *paralytic*, the *convulsive*, the *soporific*, the *maniacal*, and the *aphasic*. The last-named variety is now described for the first time. Dr. Hammond says of it:—

“The inception of this type is usually very sudden. There may or may not be the accompaniments of pain in the head, vertigo, and confusion of mind. The chief symptom is the impairment or abolition of the faculty of speech, and this may be the only phenomenon. A very interesting case is that of Prof. Lordat, which is graphically described by Trousseau. The loss of speech was at first complete, but was entirely regained in twelve hours.

“Several similar instances have come under my observation. In a case at this time under my charge, the patient, a lawyer, was suddenly deprived of all power of speech, after passing several hours in very intense study. There was a little confusion of ideas, but neither pain nor vertigo. There was loss both of the memory of words and of the power of so coördinating the muscles of speech as to articulate. There was no paralysis anywhere. Recovery was complete in less than six hours.

“In two cases occurring in my own practice, the patients were suddenly rendered aphasic by inhalation of the nitrite of amyl. The effect continued for half an hour in one case, and for nearly an hour in the other, after all the other phenomena from the amyl had entirely disappeared” page 39, *seq.*).

Dr. Hammond adheres to his statement, under the heading “*Morbid Anatomy*,” that in cerebral congestion there is sometimes a large quantity of subarachnoid effusion with an excess of fluid in the ventricles. He sums up the evidence in favour of the variation in quantity of the blood circulating in the brain in these sentences:—

“In the cases of infants, in whom the anterior fontanelle is still open, the scalp is seen to be elevated above the level of the skull when the head is dependent, and depressed when the head is elevated.

“The same fact is observed in persons who have suffered injury of the skull, involving the loss of a portion of its substance. During strong emotional excitement, or the action of any cause capable of increasing the force of the circulation, the scalp is elevated. From the action of opposite causes it is depressed. Both in infants and in persons who have received injuries such as those cited, the scalp is seen to be depressed during sleep, and to rise as soon as the individual awakes.

“A dependent position of the head causes a sensation of fulness, or

even pain, and blood may flow from the nostrils. The eyes are observed to be 'bloodshot,' and the countenance indicates congestion. A tumour, a ligature, or any other cause capable of exerting pressure on the jugular veins, will produce like effects. Ophthalmoscopic examination under such circumstances shows the veins of the retina to be enlarged, indicating that an obstruction exists to the return of blood through the sinuses and veins within the cranium. Post-mortem examination of persons dying, who, during life, have suffered interruption to the perfect return of blood from the head, reveals the existence of intracranial congestion. Animals, subjected to experiments calculated to act in the manner stated, are, after death, found to have congested brains.

"In animals bled to death the brain is found anæmic to an extreme degree.

"Direct experiment still more positively establishes the fact under consideration. If a portion of the skull of an animal be removed, and the aperture be then securely closed with a watch-glass, the vessels will be seen to enlarge and contract according to the cause brought into action, and the brain will be correspondingly elevated or depressed.

"By means of an instrument, devised, independently of each other, by Dr. S. Weir Mitchell and myself, the degree of pressure within the cranium can be accurately measured. It is thus seen that the quantity of blood circulating in the brain undergoes material variation.

"The anatomical arrangement of the blood-vessels of the cerebral tissue is such as to admit of an enlargement of their calibre without necessarily subjecting the perivascular substance to pressure. Robin discovered the existence of sheaths around these vessels, and his observations were subsequently confirmed by His, who ascertained that the same arrangement exists in the spinal cord. According to His, 'Fine transverse sections of a hardened brain, having its vessels injected or otherwise, show that all the blood-vessels, arteries, veins, and even capillaries, are surrounded by a clear space; broadest in the case of the larger vessels, but in all cases quite sharply defined externally. In transverse sections, the vessels are seen to be surrounded by a ring-like space, and in parallel sections the space is seen on each side of the trunk of the vessel, and follows it in all its ramifications.'

"These perivascular canals are lined by a hyaline membrane, and are capable of being injected, and, in cases of chronic congestion, may become permanently enlarged, so as to cause the appearance referred to under the heading of morbid anatomy" (page 49, *seq.*).

Chapter VII., on "Aphasia," is one of the most excellent portions of the work. It contains a very complete bibliographical account of this extremely interesting cerebral condition. To the end of a chapter on suppurative encephalitis or cerebritis, Dr.

Hammond appends a short account of an affection of the brain described by Dr. Charles Elam in 1872, under the name "cerebria," and defined by that writer as "a spontaneous, acute, general inflammation of the substance of the brain uncomplicated with meningitis." The existence, however, of such a malady would seem to be by no means proved.

The remaining subjects considered in this section are "Diffuse" and "Multiple Cerebral Sclerosis," "Tumours of the Brain," and "Insanity." At the very outset of the chapter on "Insanity," Dr. Hammond appears to us to have left himself open to a serious charge of *materialism*. "*The brain*," he writes,^a "*is the chief organ from which the force called the mind is evolved*, and, so far as the present inquiry goes, may be regarded as the only one. For, though wherever there is grey nerve-tissue, nervous force is generated, and though all nervous force partakes more or less of the character of that which we call mind, its qualities are not of such a nature as to bring its aberrations within the scope of this chapter." We have taken the liberty of italicising two phrases in the paragraph, because, in our humble judgment, they involve a dangerous doctrine, and render the author liable to a charge of materialism—be the same well or ill founded.

The brain—"The Dome of Thought, the Palace of the Soul"—is, indeed, as Dr. Forbes Winslow so well expresses it,^b "the material instrument of the intelligence, the physical media through which the mind manifests its varied powers." Contrasted with this succinct and rational description of "the *psycho-somatic* relation, or union *between mind and matter, life and organisation*,"^c Dr. Hammond's phraseology is painfully obscure or mischievously dogmatic. To call Mind "a force," and to describe "nervous force" as partaking "more or less of the character of that which we call mind," is correct in a certain sense, but that, as many think, the very reverse of the sense in which Dr. Hammond seems to use the terms. He makes the brain act, and mind is the result; were we equally dogmatic, we should say that mind acts, and the brain is, as a consequence, set in motion. To quote Dr. Winslow once more—"It is in conformity with the rules of logic, and in obedience to the laws of inductive reasoning, to infer that no changes in the structure of the brain or in its investing membranes can take place, no

^a Page 309.

^b *Obscure Diseases of the Brain and Mind*. London, 1860. Page 24.

^c *Loc. cit.*, page 25.

alteration in the quality of the vital fluid, or anatomical character or calibre of the numerous blood vessels that circulate and ramify through its substance can exist, without, to some extent, interfering with, or modifying its *psychical* functions. . . . Is it possible to conceive any great extent of disorganisation, even in the medullary portion of the cerebral mass, to exist, without implicating, to some degree, the grey matter of the brain, and, as a consequence, *deranging the phenomena of thought?*"

This is cautious language, which does not, with Hammond, limit the definition of "Mind" to the discharge of a great ganglionic centre of nerve force. According to it, mind may be regarded as analogous to electricity, which is called into action in a suitable apparatus, conducted along wires, and so kept under control. If the electrical machine or the conducting apparatus is at fault, the current of electricity is wasted or directed into wrong channels. So of "the *phenomena* of thought" in insanity dependent on diseased states of the brain. A critical reader may say that this is pantheism. If so, it is the pantheism of Saint Paul when he adopted as his own the words—"For in Him we live, and move, and *are*."^a We had been satisfied if Hammond had even adopted the view of Bain^b—"The one substance, with two sets of properties, two sides, the physical and the mental—a *double-faced unity*—would appear to comply with all the exigencies of the case. We are to deal with this, as in the language of the Athanasian Creed, not confounding the persons or dividing the substance. The mind is destined to be a double study—to conjoin the mental philosopher with the physical philosopher." But, according to Dr. Hammond, not only is the mind "a force," but it is "made up of several other forces," or "sub-forces" (page 312); and these are "Perception, the Intellect, the Emotions, and the Will." Surely, all this is begging the question of the material nature of the mind and its components? Of this theory, indeed, Dr. Hammond appears to have no doubt, for he concludes his introduction to the chapter on Insanity with these words:—

"The mind, therefore, as before stated, is a compound force evolved by the brain, and its elements are perception, intellect, emotion, and will. The sun likewise evolves a compound force, and its elements are light, heat, and actinism. One of these forces, light, is again divisible

^a Acts xvii. 28—*ἐν αὐτῷ ὡς ζῶμεν καὶ κινούμεθα καὶ ὡςμεν.*

^b Mind and Body. The Theories of their Relation. By Alexander Bain, M.D., LL.D. 1873. Page 196.

into several primary colours, and the intellect of man, one of the mental forces, is made up of faculties. It would be easy to pursue the analogy still further, but enough has been said to indicate how clearly the relationship between brain and mind is that of matter and force" (page 314).

If we once adopt Dr. Hammond's views as to the nature of mind, his definition of insanity is perfectly satisfactory—in any case it is as good a definition as can well be given:—

"My own idea of insanity is based entirely on the fact that, as the healthy mind results from a healthy brain, so a disordered mind comes from a diseased brain. Insanity, therefore, strictly speaking, is only a symptom, and I would define it as—

"A manifestation of disease of the brain, characterised by a general or partial derangement of one or more faculties of the mind, and in which, while consciousness is not abolished, mental freedom is perverted, weakened, or destroyed.

"An essential feature of the definition of insanity here given is, that it depends directly upon a diseased condition of the brain. This is the immediate cause, and may consist of structural changes due to injury, disease, or malformation, or malnutrition, the result of excessive intellectual exertion, the action of powerful emotions, irritations in distant parts of the body, the sudden stoppage of the digestive process, the introduction into the system of certain drugs, such as opium, alcohol, belladonna, &c., the retention in the organism of substances poisonous in character, but which in health are excreted, and of other factors capable of altering the quantity or quality of the blood circulating through the cerebral vessels, or of accelerating or retarding the metamorphosis of tissue which the brain undergoes in common with all the other organs of the body" (page 317).

He classifies the forms of Insanity as follow:—

"I. *Perceptual insanity*, characterised by the tendency to the formation of erroneous perception either from false impressions of real objects (illusions), or from no external excitation whatever (hallucinations).

"II. *Intellectual insanity*, characterised by the existence of delusions.

"III. *Emotional insanity*, characterised by the uncontrolled or imperfectly controlled predominance of one or more of the emotions.

"IV. *Volitional insanity*, in which there is an inability to exert the full will-power either affirmatively or negatively.

"V. *Mania*, characterised by the union of two or all four of these forms in the same individual.

"VI. *General paralysis*, a peculiar form of insanity, attended with progressively-advancing loss of mental and motor power.

"VII. *Idiocy and dementia*; the first due to the fact that there are

original structural defects in the brain; the second resulting from the supervention of organic changes in a brain originally of normal power" (page 319, *seq.*).

The chapter is illustrated by some striking pictures of the insane.

In Section II., on "Diseases of the Spinal Cord," we find much valuable information. Some readers will wonder at the assurance with which Dr. Hammond advances certain novel views as to the identity of spinal anæmia and spinal irritation, and as to anæmia of the antero-lateral columns of the cord being the exciting cause of reflex paraplegia. The section is very complete, and includes an admirable account of that form of disease called by the author "Progressive Facial Atrophy," by Romberg "Trophoneurosis Facialis," and by the late Dr. W. D. Moore, in our own columns.* "Uni-lateral Atrophy of the Face." To Dr. Moore's paper Dr. Hammond refers in complimentary terms.

Section III., on "Cerebro-Spinal Diseases," opens with a chapter on "Hydrophobia." Dr. Hammond gives a truthful and most graphic description of this terrible malady, and details the microscopical appearances in the sixth fatal case observed by him. They agree with those observed by Benedict and Lockhart Clarke, and the author inclines to regard the morbid anatomy of hydrophobia as consisting essentially rather in a granular degeneration of the nerve-tissue (Lockhart Clarke) than in an acute exudative inflammation of that tissue (Benedict).

The last chapter (XI.) in this section treats of "Exophthalmic Goitre," a disease which Dr. Hammond, "with hesitation," has ventured to include under the head of cerebro-spinal affections. We must let him vindicate this view in his own words:—

"I am inclined to think that, in the present state of our knowledge, we are scarcely warranted in locating exophthalmic goitre in the sympathetic nervous system, and that we are justified in regarding it as an affection of the brain and medulla oblongata. I base this opinion not so much on the fact that there have been cases in which no lesion of the sympathetic has been found—though, notwithstanding our imperfect means of research, the point is of some importance—as on the nature of the symptoms which characterise the disease. The disturbance of cardiac action, the cough, nausea, and protrusion of the eyeballs, indicate the pneumogastric nerves as the organs through which the phenomena

* Dublin Quarterly Journal of Medical Science, August, 1852. Page 245.

are manifested, and, though the enlargement of the thyroid gland shows vaso-motor disturbance, this can undoubtedly be produced from a lesion of the medulla oblongata as well as from one of the sympathetic. The absence of pupillary disturbance is one of the strongest circumstances against the hypothesis of sympathetic disorder.

"Vulpian has fully discussed the question of the anatomical substratum of exophthalmic goitre, and concludes that it is not yet shown that this is to be found in the sympathetic nervous system. The fact that we cannot produce a corresponding affection in the lower animals by irritation of the sympathetic nerve, is strongly against the correctness of the theory under notice.

"Many have held the opinion that the disease is an affection primarily of the heart and the blood-forming organs, and they adduce the chloro-anæmia which so generally exists as a prominent condition in support of this view. I was at one time disposed to accept this as the most reasonable explanation of the pathology of exophthalmic goitre, but more thorough consideration has served to convince me that it is not tenable. We have, in fact, no evidence to show that either chlorosis or anæmia ever produces in their entirety the remarkable phenomena characteristic of Graves's disease; on the contrary, we see every day the most well-marked examples of both affections without either thyroid hypertrophy or ocular prominence.

"Neither can it be regarded as due to an organic affection of the heart. It is true that sometimes this organ is found to be the seat of structural disease in cases of exophthalmic goitre, but these lesions—generally hypertrophy and mitral insufficiency—are themselves rather the results than the cause, and, moreover, they are not such as could, so far as our knowledge extends, produce either enlargement of the thyroid gland or protrusion of the eyeballs" (page 798, *seq.*).

The extent to which this review has already run precludes the possibility of considering at length the section on "Diseases of the Peripheral Nervous System," which, on the whole, is extremely good. In using the term "*Neural Hyperæsthesia*" as synonymous with "*Neuralgia*," the author has made a slip, for severe nerve-pain may, as is well known, coincide with loss of sensation in a nerve.

The last section, on "*Toxic Diseases of the Nervous System*," is a novel feature in the work. It embraces five chapters—on *Plumbism*, *Alcoholism*, *Bromism*, *Hydrargyism* (why not *Hydrargyrism*?), and *Arsenicism* respectively. The phenomena manifested in the nervous system as consequences of lead-poisoning are enumerated and described by the author as "lead-encephalopathy,

paralysis, a spasmodic and painful affection called lead-colic, anæsthesia, and hyperæsthesia." Lead-encephalopathy is the most serious of all the forms of plumbism, especially when there is a combination of delirium, convulsions, and coma. In lead-paralysis the prospect of recovery depends altogether on the ability to produce contractions in the paralysed muscles by electricity. A rapid cure may be expected, if the induced current affects them; a longer time is required, if the interrupted primary current alone produces contractions; the prognosis is unfavourable, if the muscles react to neither current. Speaking of the morbid anatomy, Dr. Hammond says:—

"It is probable that, except in extreme cases, or in very exceptional instances, the changes in the brain, spinal cord, nerves, and sympathetic system, are not such as are discoverable by our present means of research, just as are the alterations produced by opium, alcohol, hydrocyanic acid, strychnia, and other substances.

"The muscles, in cases of lead-paralysis, have been examined by Andral, Gendrin, Tanquerel des Planches, and others, and analogous results obtained. The fibres have been found to be pale and yellowish, to be friable, atrophied, and desiccated. I have repeatedly removed small portions with Duchenne's trocar, and have always found the transverse striæ disappearing, and fatty degeneration making its appearance.

"The hypothesis that the affection is, primarily, one of the muscles, is not supported by facts. Such a thing as muscular paralysis, independent of nervous derangement somewhere, is unknown in the whole range of pathology. And those cases of apparent loss of muscular irritability, resulting from certain poisons, adduced by Longet, Bernard, Mitchell, myself, and others, were simply instances in which the loss of nervous irritability took place from the periphery to the centre. The present state of our neurological knowledge is altogether against the idea of muscular irritability independent of the nerves. When a muscle is no longer capable of contracting, it is because the nerves are dead" (page 846).

The chapter on "Alcoholism" is one of the best in the book. In his description of chronic alcoholism, the author follows closely the lines laid down by Dr. Magnus Huss, of Stockholm, in 1849.* The types of the disease described are (1) the *paralytic*, (2) the *anæsthetic*, (3) the *eclampsic*, (4) the *hyperæsthetic*. The pathological appearances most commonly observed are congestion of the

* *Alcoholismus Chronicus, eller Chronisk Alkoholssjukdom. Af Dr. M. Huss, Professor i Mediciniska Kliniken vid Kongl. Carolinska Medico-Chirurgiska Institutet.*

cerebral meninges and substance of the brain, subarachnoid effusion of serum, pachymeningitis and hæmatoma, chronic inflammation of the pia mater and arachnoid, with thickening and opalescence, granular or fatty disintegration of the cerebral tissue, usually best marked in the cortical substance. In the treatment of chronic alcoholism, Dr. Hammond speaks highly of the efficacy of the bromides of potassium, sodium, calcium, or ammonium, in full doses (15 to 30 grains) three times a day. But he prefers the bromide of zinc to all other remedies. It may be given in 2-grain doses (in solution in water or syrup) three or four times a day—the dose being doubled or trebled by degrees if the stomach will permit it. He also speaks highly of digitalis as a cardiac tonic and eliminant of alcohol through the kidneys. A tablespoonful of the infusion, or from 15 to 30 drops of the tincture, may be administered three or four times a day. In acute alcoholism, or *delirium tremens*, he recommends opium, with moderate quantities of brandy or whiskey, *where the attack is due to sudden cessation from the use of alcoholic liquors*. Where, however, the symptoms develop *during a debauch*, these remedies “add fuel to the flame,” and the bromides, in large doses with digitalis, are indicated. The author has, strangely enough, no experience of chloral hydrate in this affection, and he has tried mono-bromide of camphor in only one case. He wisely says the strength should be supported with beef-tea, and after convalescence, quinine, iron, and strychnia will prove of service.

The article on *Bromism* is good, while those on *Hydrargysm* and *Arsenicism* are somewhat meagre, but possibly this could not be avoided from the nature of the case. Of the diagnosis of hydrargysm (what a barbarous word this is!), Dr. Hammond says that it—

“Is rendered quite certain by the administration of the iodide of potassium, which, as Melsens has shown, separates mercury from its combinations with the tissues of the body, forming with it a new compound—the iodide of mercury—which is eliminated with the urine. All that is necessary therefore is to give the iodide of potassium in large doses to a patient suspected to be suffering from hydrargysm, to put a few drops of the urine, excreted during the second day, on a bright copper plate, and then add a drop of hydrochloric acid. A bright metallic stain will be found on the plate if mercury be present. The iodide of mercury is decomposed, and the metal is precipitated as stated” (page 874).

Within the limited space at our disposal, it would be impossible to consider in detail the many topics of surpassing interest which

Dr. Hammond brings under notice in the work we have been considering. It is a matter for regret that the important subject of the condition of the urine in nervous and mental diseases is passed over almost in absolute silence. A casual test applicable to the renal secretion is mentioned here and there throughout the book, but the symptomatology of the urine is utterly neglected. Surely this should not have been the case.

Despite some faults, however, and the daring precision with which he treats many an obscure affection of the brain or spinal cord, the author has admittedly produced a standard work. And the busy practitioner, searching for a diagnosis in the presence of perplexing and anomalous symptoms, will never consult these pages in vain, whether he seeks for a rational explanation of such symptoms, or looks for aid in the treatment of disease.

Method of Performing Post-mortem Examinations. By Professor RUDOLPH VIRCHOW. London: J. & A. Churchill. 1876. Pp. 86.

THIS work, though small in compass, contains a most important lesson for the British nation; and we earnestly commend it to the serious consideration alike of the profession in general, the teaching and licensing bodies, and the legislature.

No man of his generation has had more influence, directly and indirectly, on the progress of medical science than Rudolph Virchow. It is in great measure to the reforms which he has been instrumental in carrying, that Germany owes the high scientific position to which she has attained, and which has established her as the instructress of the world in both theoretical and practical medicine. We therefore welcome this short epitome of the development of a regular and systematic method of making and recording *post mortem* examinations, which has reached such completeness in his hands, in the hope that it may have some effect in arousing us from our present lethargy on the subject, and strengthen the hands of those who are anxious to bring about a better state of things in this country.

Post mortem examinations have, of course, two very distinct aspects, according as the object with which they are undertaken be the advancement of our knowledge of pathological conditions, or the discovery of medico-legal evidence. In either case the object

is exceedingly important; and one would imagine, *a priori*, was such as to demand the utmost skill that could be bestowed upon it. In Germany, now-a-days, whenever it is practicable, all autopsies are conducted by expert pathologists—in a university town by the professor of pathological anatomy, or his assistant, who are generally persons who devote their whole time to pathology—and if the case be a medico-legal one it must be conducted, and a report drawn up, in accordance with the very definite regulations laid down by the State, the present form of which Virchow declares to be “an expression of the knowledge, acquired through long experience, of the most suitable arrangements for conducting *post mortem* examinations.”

In this country—at least in Ireland—on the contrary, a *post mortem* examination is the one thing which every one, whether student or practitioner, is thought perfectly competent to perform. In most hospitals, if *post mortems* are made at all, they are made by students who have, as a rule, passed no examination in even normal anatomy; in many instances the dead-house is under the control of the apothecary; and in no hospital, so far as we know, is a systematic record kept, unless perhaps by an individual physician or surgeon of his own particular cases. Under such circumstances it is very natural that pathological anatomy should be the one subject which it is thought utterly unnecessary to teach or to examine in. There are in Dublin, it is true, several museums in which a vast number of pathological specimens are preserved, but these are for the most part either dry bones, or in such carefully sealed jars as to be utterly inaccessible to students or teachers for microscopic or other minute examination. The existence of the Pathological Society of Dublin, in its present form, where students are admitted to its meetings, tends moreover to delude us into the notion that it performs the functions of a pathological teacher; whereas, in our opinion, not only is such a notion as this utterly absurd, but further, the presence of students at the meetings is in itself a complete bar to the reforms which the advance of pathological science has long demanded. But because the society was the first of its kind ever instituted, and because the illustrious men who founded it, and who were then leaders in medical science, handed it down to us in a particular form, no change is thought necessary; and Dublin of to-day vainly imagines that it is following the example of the honoured generation gone before, because we still step in the footprints they have left us, utterly unmindful of the

fact that these footprints were made by an advance party in new untrodden ground, and that if we had availed ourselves of them in the spirit in which they were left to us, we should long ago have reached the vantage ground to which they led. But now they are well-nigh effaced, and we have lost our track; and having made no advance, our position is incomparably worse than it was. Under such circumstances also, it is only natural that we find the medico-legal aspect of the question in a state disgraceful alike to our profession and the legislature. It would be very difficult to lay the blame of the present state of affairs on any set of persons in particular; still it behoves us to look at things honestly in order to see whether anything can be done to improve them. That some improvement is needed must be admitted, where our daily papers constantly afford us reports of coroners' inquests, such as the following:—

It was stated that "death resulted from ossification of the heart, a disease often met with in the case of old people, but seldom in that of a person so young as the deceased, who was only twenty-one years of age."

"There was a large black contused wound upon her thigh. He detailed other marks he observed, and said he was of opinion all these were the result of kicks or blows; the one on her thigh was undoubtedly from a kick. Deceased also suffered from blood-poisoning, which might be the result of a specific disease or of an irritant or vegetable poison."

" . . . deposed to having made a *post mortem* examination of the body. He found the bones of the skull on the left side completely bruised. The injuries were caused by violence, probably a blow of a stick or stone, or a kick."

"The cause of the bringing away of the marbles was, that on a second *post mortem* examination half a marble was found embedded in the murdered man's heart. It was found that amongst the marbles in the bag was one the size of which, if it was cut in two, would be the same as the half a marble got in Feehan's heart. The first *post mortem* held on the day of the inquest did not disclose the fact that the heart was touched, nor was the half marble discovered. The marbles in the bag are such as are used by children at play."

"He had examined himself the other portions of the body, and found them healthy, with the exception of the *dura mater*, which was greatly inflamed. Deceased, prior to her death, was in a low fever."

the result of a beating she had received. He thought the injuries inflicted by the blows might have accelerated death. On cross-examination, witness stated that deceased died from violence, coupled with the disease of the brain which, he believed, had been caused by violence, as it was in nineteen cases out of twenty."

When Virchow first entered on his duties, at the Charité in Berlin, as Assistant to Froriep, thirty-two years ago, he found the state of affairs, as regards clinical *post mortems* at least, very similar to that existing in Dublin at the present day. Froriep seldom conducted an autopsy himself, and the greater number were made by young surgeons studying at the Charité for their State examination, without any system, and without any record being kept. Virchow immediately applied himself to the task of reform, aiming at rendering the material at his disposal as generally useful as possible. It was obvious to him, as it ought to be to us, that a *post mortem* examination made by an inexperienced individual, or in a hap-hazard manner, is not only of questionable advantage to the person who performs it, but further, that any record of such cannot be in any way relied on.

Two things seemed absolutely essential—first, that the dissection should in all cases be conducted in accordance with a definite system, for thus alone could trustworthy comparisons be rendered possible; and, secondly, that the record should be ample and accurate, and expressed in simple and definite terms.

In addition to these essential conditions in the perfecting of his system—first, as Assistant at the Charité, subsequently as Professor at Würzburg, and ultimately as Professor at Berlin—Virchow has never lost sight of the importance of making the dissection in such a manner as to render the specimens as useful as possible for educational purposes.

Virchow's labours, as well as those of many of his contemporaries, have ever been directed to showing that pathological anatomy ought to be studied as a distinct entity, independently of its clinical relationships. Hence partial *post mortems* could find no place in his system. In his Lectures, in 1859, he said:—"The present generation is conversant with pathological anatomy only as a supplement of the clinic. As a rule, the clinical teacher determined, while the patient was alive, which organ was to be the object of investigation; and the autopsy likewise was usually confined to that organ, or at least dealt with all the others only

in a secondary manner. The clinical anamnesis, consequently, decided the course of the anatomical examination. We all know what was the result. The fact is, that we can further the advance of medical science, in the most essential manner, by acquiring the habit of submitting all the other organs of the body to a minute examination, for it is obvious that we can do as much by anatomical as by clinical examination."

The contrast, in this point, between this country and Germany, is very striking. In the Pathological Institute in connexion with the General Hospital in Vienna, for example, there are three *post mortem* rooms—namely, one, in which the professor of pathological anatomy and his assistants perform *post mortems* on the bodies of persons who had not been lectured upon in the clinic; a second, in which the bodies of persons who had died while under clinical observation are examined in the presence of the clinical teacher and his class; and a third, in which all medico-legal *post mortems* are conducted. To us it would seem a very startling innovation that a clinical teacher should calmly stand by while a pathologist demonstrated to him and to his class the correctness or incorrectness of his diagnosis; yet, after all, surely there is nothing in this from which an honest clinical teacher need shrink. In medico-legal cases also such a system—provided always that the pathologist were an expert—would not only give immense additional weight to any evidence derivable from this source, but would frequently be the means of clearing the character of a clinical attendant, in a manner which would be quite impossible if the autopsy were performed by himself. It has long been recognised in the case of any chemical examination that the clinical attendant is not the person to conduct it; and, in our opinion, it would be a very important step in the right direction to recognise the fact that it is utterly absurd to expect him to be competent to undertake the examination at all. Suppose, for instance, a surgeon, for many years entirely devoted to practice, suddenly called on to make an accurate dissection in the case of a gun-shot wound. It is quite compatible with his having an excellent practical knowledge of surgical anatomy that he should not be at all sufficiently conversant with the technicalities of normal anatomy, either to make a trustworthy and adequate dissection, or to defend his position in cross-examination; and we all know very well that the ends of justice are frequently frustrated, and most unjust aspersions cast on the conduct of a medical attendant, owing to this weak point—

which, in our opinion, is only natural, and one for which he is in no way blamable—being recognised and turned to account by a prisoner's counsel.

It is, no doubt, quite true that, except in large cities, it would not always be possible to secure the services of a skilled pathologist, and consequently it would often be necessary to fall back on the local practitioner. But this in no way argues against skill being availed of where it is possible to have it, nor of the character of evidence obtainable from such a source as the Poor Law Medical Service being vastly improved. At present it often happens that the first *post mortem* a medical man is called on to perform—very probably he may never have even witnessed such a thing—is an important medico-legal one, which he has to undertake on the spur of the moment, without assistance or advice. Such a state of things ought not to be possible; and, in such a case, it surely cannot be regarded as anything but a matter of chance if accurate or trustworthy evidence be discovered. It would, however, be very different if he were supplied with regulations such as are supplied in Germany, and which are based on, and very closely resemble those adopted by Virchow, as the best for ordinary scientific purposes.

In a work such as the present it would, of course, be impossible to give anything beyond a mere sketch of the system, and a few indications of the reason why a particular course of procedure has been adopted; still we venture to hope that the forcible manner in which these latter are expressed will be sufficient to convince any thoughtful man of the immense importance of an exact method, and of the untrustworthy character of any results, where some of the more fundamental rules are violated. The system is exemplified by a full account of three medico-legal cases.

It must not, however, be imagined that the system is in any way a rigid one. Exactly the reverse is the case.

“The method should be practised, not mechanically, but systematically, as it has for its basis well-weighed experience, and not mere casual observations. . . . It is scarcely necessary to point out that there are many cases in which deviations from this method are not merely allowable, but also absolutely necessary. The individuality of the case must often determine the plan of the examination. But we must not begin with individualising, nor make a rule of the exceptions. The expert may allow himself to make alterations, supposing they are well grounded, but he must be able to remember his motive for so doing, and also to state it.”

Consequently, "a full and intimate acquaintance why the plan or rule has been laid down is quite imperative."

We cannot but believe that the introduction of Virchow's system would be an incalculable boon to the cause of science in every way, and we have long held that some such regulations as those in vogue in Germany are absolutely essential if our coroners' inquests are not to become complete farces. Still it would be vain to imagine that the adoption of such regulations would in itself be sufficient to render our medico-legal autopsies what they ought to be. The fact is, the vast majority of medical men in this country would be incapable of carrying out the rules laid down, and their incompetency to make trustworthy *post mortems* would only become all the more apparent. But this, so far from being any reason why we should not have such regulations, seems to us to indicate very plainly—first, the importance of the legislature effecting some reform of the kind, and, secondly, the necessity of providing proper instruction for students in pathological anatomy.

In Germany the course in pathological anatomy includes a practical course in *post mortems*, in which each student in turn performs all the manipulative details, each step of the examination being under the immediate direction of the professor. Considering then the great responsibility which often attaches to a *post mortem*, and taking into account the few chances which practitioners in the country have of acquiring a practical knowledge of the subject, we cannot but think that a certificate of having taken part in a certain number of *post mortem* examinations, under the guidance of a recognised pathological teacher, ought to be regarded as quite as important as practical attendance on midwifery or fever cases.

In conclusion, we shall merely refer to two further considerations which the perusal of this work naturally suggests.

First, it seems most reprehensible that a *post mortem* examination should not be required in all cases of coroners' inquests. We do not believe there is any real objection to such a thing in the case of the poor, and any morbid sentimentality in the case of the wealthier classes is a thing which ought not to weigh against the claims of justice.

Secondly, it is a matter of great regret that such a vast amount of pathological material as our Dublin Hospitals and Unions afford should go utterly to waste, and in connexion with this we cannot but refer to the lamentable sign of the times which has, comparatively recently, come under our notice—namely, that the board of

an institution, which might naturally have offered a great field for the pathological investigation of two such scourges as cancer and tubercle, should, in this age of the world, emphatically declare that under no circumstances should a *post mortem* be performed within the precincts of the hospital.

The Medical and Surgical History of the War of the Rebellion.
Surgical Volumes—Part I., Vol. II., and Part II., Vol. II.
Washington: Government Printing Office. 1870–76.

THE first of these splendid volumes contains, in 650 pages, quarto, an exposition of the statistics and detailed reports of the various injuries of the head, face, neck, spine, and chest, which occurred in the American War. The entire number of cases of injury by war-weapons of these regions, whose “nature and results” are set forth, amount to 49,016.

The second volume, issued this year, contains a similar exposition of no less than 111,050 injuries of the abdomen, pelvis, back (flesh wounds), and upper extremities. This volume numbers 1,024 quarto pages. A third volume is yet to come, completing the account of the military surgery of the lower extremities, fractures, luxations, burns, scalds, and frost-bites, based on statistical details of a range similar to that of the present issue.

The learned editor, Assistant-Surgeon George A. Otis, promises to conclude with chapters on generalities relating to gun-shot wounds and their complications, and on amputations, excisions, and ligations, on anæsthetics, &c.—a promise which makes us look forward with anxiety for the third volume.

The great size of these books is, at first sight, calculated to repel any but the most determined surgical student. Were it not for the beauty of their illustrations, which serve as an inducement even to the idler to turn from page to page, we fear many would close them as soon as they had seen enough to save their consciences when asserting familiarity with them. In this respect the surgical volumes possess great advantage over their worthy medical sister, which offers to cursory inspection mere food for a calculating machine.

A hasty glance, as one turns from picture to picture, is sufficient to show the reader that there is much more material in these pages than even the numbers we have given above would imply. The

editor, in brief introductory notes, and in short summaries at the close of each section, draws attention to the practical conclusions to be drawn from the study of each group of cases, and furnishes an exhaustive examination of the literature of each.

The completeness and accuracy of the bibliographical notes render these volumes invaluable as books of reference, while the full supply of facts furnished by the text enables the student to bring any surgical theory at once to the test of actual practice, for it is hard to name any injury of which instances cannot be found in abundance amongst these details.

It is hopeless for us, within the space at our command, to attempt an analysis of these books, for they are themselves essentially analyses. We can merely commend them as most complete works of reference, and notice in support of our commendation a few salient points of interest sufficient to encourage any shy reader who may dread their size.

For instance, in the chapter relating to injuries of the head, the beautiful photographs which Plate IV. contains at once arrest attention, and lead us to examine the text. We are compensated by finding accurate records of twenty instances of the rare injury, fracture of the vitreous table of the skull from gun-shot contusion, without fracture of the outer table, of which the plate represents *facsimiles* of typical cases:—

“Of these twenty patients, but one recovered. The interval between the reception of the injury and the fatal termination, in the other nineteen cases, varied from ten to sixty-one days. The average duration of life was twenty-two days. In thirteen cases there was suppuration beneath the dura mater; in two pyæmia and metastatic fever supervened, and in four there was encephalitis and softening of the brain substance. In four cases the blow was inflicted upon the frontal region; in thirteen, upon the parietal; in two, on the occipital; and in one, the site of the injury is not specified. In fourteen instances the injury was caused by the oblique impact of musket-balls; in four cases, by shell fragments; in one case, by a buck-shot; and in one case the nature of the projectile is not stated.”

Such is the brief summary of the details of these cases, all of which have been verified by the actual examination of the parts involved, even in the case of the one recovery, for here exfoliation revealed the nature and extent of the lesion. The editor follows his summary with an examination of the recorded cases of this injury, and an account of the writings and opinions of authors on

the subject, which will well repay perusal, particularly the extract which contains an account of a case in which Stromeier demonstrated the possibility of diagnosing this lesion by percussion with a probe over the seat of fracture, eliciting the "cracked-pot" sound of La Motte. Lest our readers should form too gloomy an opinion from our short extract on this subject, it is necessary to quote a short passage from Stromeier's observations in explanation of the high rate of mortality attested by the record of this lesion:—

"These inner separations remain generally undiscovered, which is, in my opinion, lucky for the patient, because thereby he escapes the danger of being trepanned. It is not assuming too much to suppose that these cases would generally result favourably if the patient was subjected sufficiently long to an antiphlogestic diet, because the danger incurred by these cases is evidently less than in others where the access of air to the splintered part of the inner table takes place."

The discussion of this fracture—itself of old regarded as a fracture by *contre-coup*—naturally leads us to examine the conclusions of the editor on the subject of fracture by *contre-coup* in the skull. He writes as follows:—

"It may be safely asserted that, abstracting the fractures of the inner without injury to the outer table, no incontestable instance has been produced of counter-stroke fracture of the skull from gun-shot—a negative result which the laws governing the transmission of forces would lead us to anticipate."

A statement of great weight, seeing that it is based on the examination of 4,350 gun-shot injuries of the head, excluding cases fatal on the field.

In summing up the facts relating to the pathology of concussion of the brain, the editor writes as follows:—

"In one case concussion produced almost instant death; but neither this nor the thirteen other cases which resulted fatally from the direct effects of concussion throw any light upon the functional or textural alterations of the brain resulting from the shock, but leave the subject, which has perplexed pathologists for so many centuries, as inscrutable as ever."

It is clear, we think, that the editor's view on this matter is, that but little reliance is to be laid on these cases in support of the theory that death occurs in such circumstances without definite

organic lesion. As far as we are able to trace these cases in the reports, there is a want of anatomical search, and a too ready adoption of the ready method of accounting for death by the simple word "concussion."

On the parallel subject in the surgery of the abdomen, sudden death attributed to blows on the epigastrium, the editor writes without in any way concealing his scepticism:—

"It is an open question whether a blow on the abdomen may produce sudden death without any organic lesion. The affirmative and popular opinion has been handed down among surgeons, and appears to rest on Sir Astley Cooper's authority, and upon little evidence; and Mr. Pollock and Mr. Bryant are justified in their scepticism regarding it. It need not be further discussed here; for no instance in which a fatal result was ascribed to such a cause was reported during the war."

Those who shake their heads and look wise while they authoritatively condemn the use of sutures in scalp wounds, will be shocked by reading the following:—

"No instance was reported of any special inconvenience arising from the employment of stitches. In one case a very long wound was sowed up by the continued or Glover's suture, without bad consequences. Usually, when adhesive plasters were considered insufficient to approximate the edges of the wounds, the interrupted suture, with metallic threads, was employed. . . . The importance of adjusting the parts with the nicest accuracy was generally appreciated."

Both in reference to scalp wounds and wounds of the abdominal and thoracic parietes, we find the editor speaking most explicitly as to the injurious effects of the use of perchloride or persulphate of iron as styptics used to control bleeding.

The following passage, which we extract from the chapter on abdominal wounds, lays down the rule in reference to this matter most clearly:—

"Here, as in the management of bleeding from the wounded internal mammary and intercostal arteries, timid, inefficient, temporising treatment appears to have been followed by lamentable loss of life. The instances to be cited teach emphatically that wounds of the epigastric, circumflex, mammary, and lumbar arteries, are not to be regarded as trivial, but demand the rigorous application of the rules for the management of wounded arteries, the exposure of the bleeding point, and a

proximal and a distal ligature. Schendler and Hesselbach have invented compressors for the epigastric artery, and the practitioner will find propositions in the books for compression by bougies introduced in the wound, or by raising a fold of the soft parts, and recommendations of the ever-ready styptics; but all such means should be rejected by those who would practice sound surgery. The rule of Chelone in regard to astringent styptics ('their use, therefore, is confined to bleeding from small vessels, from mucous membranes, and so-called parenchymatous bleeding') must be strictly observed, and the arteries under consideration must not be regarded as small vessels in the sense in which the term is here employed."

The extracts we have made furnish examples of the character of these volumes sufficient to indicate to our readers their range and practical style. We have already noticed the beauty of their illustrations, containing *fac-simile* representations of fractures of the skull; equally remarkable are the photographs of wounded intestine, of fractures of the pelvis and scapula, &c. To this list we must add the valuable representations which the notes contain, illustrative of the chief instruments used, not only in military surgery, but generally.

Our space forces us to reserve any further examination of them until the concluding volume—which promises to be the most useful of the series—reaches us.

Surgical Emergencies. By W. P. SWAIN. Second Edition. London: J. & A. Churchill, New Burlington-street.

THIS book deals with a number of the emergencies of surgery, and gives brief directions for dealing with them. The writer has added some pages on emergencies connected with parturition. We think the space occupied by a description of amputation at the hip-joint or excision of the knee might be better employed. The book, however, contains much useful matter, which will be useful to busy men.

The Essentials of Bandaging. By BERKELEY HILL, Professor of Clinical Surgery in University College. Third Edition. Pp. 304. London: Smith, Elder & Co.

WE are glad to see that this volume, specially useful to students, has passed into a third edition, and that the author has succeeded

in making it even more valuable than it has yet been. It is not entirely devoted to the methods of applying various bandages, but deals with the management of fractures and dislocations, and the appliances necessary to their proper treatment. A great deal of miscellaneous information is given upon such subjects as the drawing of teeth, the passing of catheters, the making of poultices, &c., and upon almost every point which a student ought to know in the practical work of the hospital. Mr. Hill has added a chapter on surgical landmarks, from Mr. Holden's article in the "Bartholomew Hospital Reports," and some excellent words of guidance by Mr. Clover as to the administration of ether and chloroform. The volume is the best of its kind that we know.

A Course of Practical Chemistry, arranged for the use of Medical Students. By WILLIAM ODLING, M.B., F.R.S., &c. Fifth Edition. London: Longmans, Green, & Co. 1876. Pp. 262.

IN August, 1868,* we noticed the second edition of this work in favourable terms. It affords us much satisfaction to state that the present edition is even more deserving of approval. It will, doubtless, be of great use, not only to medical students—for whom especially it is written—but also to the busy medical man, who may, on an emergency, stand in need of a trustworthy guide in analytical chemistry. Our hint as to the substitution of the new atomic weights for the old system was adopted in the fourth edition; and in this issue the new system of atomic weights and formulæ has been employed throughout.

The work consists of four "Chapters," or parts. The first, or introductory chapter, includes a clear *résumé* of modern views as to chemical reactions, and a succinct description of chemical manipulation. In the second, or analytical chapter, directions are given for the separation of the several sub-groups of bases from one another, and for the recognition of the several members of these sub-groups in presence of each other. Chapter III., on "Toxicological Chemistry," is admirably conceived. It cannot fail to aid the profession in medico-legal practice bearing on the analysis of acid, metallic, and organic poisons. Of Chapter IV., on "Animal Chemistry," we have also formed a high opinion. The author does not mention crystallisation of nitrate of urea from some specimens

* Cf. Dublin Quarterly Journal of Medical Science. Vol. XLVI. Page 149.

of unconcentrated urine, and he seems to depend too much on the accuracy of Pettenkofer's test for cholic acid. These, however, are minor points, which will not detract from the value of an accurate, well-written, and well-illustrated book.

WORKS ON SURGERY.

1. *Illustrations of Clinical Surgery.* By JONATHAN HUTCHINSON, F.R.C.S. Fasciculus IV. London: J. & A. Churchill, New Burlington-street.
2. *A Course of Operative Surgery.* With Plates drawn from Nature by M. LEVEILLÉ. By CHRISTOPHER HEATH, F.R.C.S. Part III. London: J. & A. Churchill.

THE fasciculus of plates last issued by Mr. Hutchinson is the first of a series upon injuries of the head, which it is intended shall extend through three numbers. They will be selected from the original drawings which accompanied the author's essay, awarded the Astley Cooper Prize in 1864. The plates illustrate cases of direct traumatic arachnitis, inflammation of sub-arachnoid spaces at the base of the brain, passive congestion and diffuse ecchymosis of pia mater, and contusion of the surface of the brain. The explanatory text is very full, and there is a tabular list of a large number of fatal cases of cranial injury. The number fully maintains the character of high excellence which the work has already earned at the hands of the profession.

Mr. Heath's plates in operative surgery, with accompanying text, have reached the third part. The present issue comprises operations upon the jaws, trachea, larynx, tongue, intestines, arteries, &c. The lithographs are done in the best style of art, from specially prepared subjects. We are glad to be able to repeat our commendations.

A Guide to the Examination of the Urine. By J. WICKHAM LEGG, M.D. Fourth Edition. London: H. K. Lewis. 1876.

THIS little book has fairly won for itself an increasing popularity, and we need scarcely commend it again to the notice of our readers. The chief novelty in this edition is the account of Drs. Russell and

S. West's method of estimating urea by sodium hypo-bromite. We agree with the author in rejecting Strassburg's modification of Pettenkofer's test as unreliable, and indeed it is high time to impress on students, more generally than is at present done, the fact that Pettenkofer's test for the bile-acids is clinically valueless and misleading as usually applied—i.e., directly to the urine. It is strange that several printer's slips should occur in a fourth edition; and so good a text deserves to be adorned with better figures than the caricatures of renal casts given on p. 66.

Taking it all in all, this compact little work is the simplest and best introduction we know of to the important but too often despised subject of uroscopy.

Atlas of Skin Diseases. By TILBURY FOX, M.D. Parts VII.—X.

THE editor and publishers are to be congratulated on the regularity with which the parts of this Atlas have hitherto appeared, and we have only to repeat our commendation of this useful undertaking.

The four plates in Part VII. are devoted to the representation of the principal forms of Herpes. Dr. Fox maintains the existence of a true circinate variety of herpes, non-parasitic, but considers it to be a rare form. He also holds to *herpes iris* as a distinct, although rare and curious, variety, not to be confounded with erythema or hydroa. By an accident the descriptive letterpress of Plates XXVI. and XXVII. has been transposed.

Part VIII. figures Pemphigus, Ecthyma, and Rupia. An extreme case of that rare and serious form of skin disease, termed *Pemphigus foliaceus*, is depicted in Plate XXX.

Part IX. delineates the most important varieties of Psoriasis, including the rather uncommon modification, *Psoriasis rupioides* (M'Call Anderson), which might easily give rise to an error in diagnosis. *Psoriasis palmaris*, *Pityriasis rubra*, *Pityriasis pilaris* (Devergie), and a third illustration of *Lichen ruber*, are represented in Part X.

PART III.

HALF-YEARLY REPORTS.

REPORT ON NERVOUS AND MENTAL DISEASE.*

By RINGROSE ATKINS, M.A., M.D., &c.; Assistant Medical Officer, District Lunatic Asylum, Cork.

As the question of the functions of the brain is still on its trial, and as fresh interest has been aroused in the subject by the recent lectures, of Dr. Brown-Séquard, delivered before the College of Physicians in London, in which he opposes the hitherto received doctrines of cerebral action, and more especially the recent conclusions regarding the localisation of the cerebral functions, I have thought it sufficiently interesting to devote this Report wholly to a statement of his views, and those of M. Charcot in opposition to them, expressed at several meetings of the Société de Biologie, and I have accordingly taken, *in extenso*, from *The American Journal of Nervous and Mental Disease*, a lengthy abstract of the Reports of the meetings of that Society, culled from *l'Union Médicale* and the *Gazette des Hôpitaux*. At the session of the Société de Biologie, November 13th (rep. in *l'Union Médicale*), Dr. Brown-Séquard exhibited a dog in which he had laid bare, and cauterised with a red hot iron, the right cerebral hemisphere. The following phenomena were presented by the animal:—Closure of the eyelids, pupillary contraction on the right side, and, further, a projection of the nictitating membrane on that side. Besides this, there was a paralysis of the limbs on the corresponding side, and they were sometimes contracted, sometimes relaxed. In this case certain phenomena not met with in all experiments were observed. Besides the paralysis of the right posterior limb there was a contraction of the vertebral muscles of the right side and its posterior

* The author of this Report, desirous that no contribution to the subject of Nervous and Mental Disease should remain unnoticed, will be glad to receive any publications which treat of it. If sent to the correspondents of the Journal, they will be forwarded.

member. This contraction of the paralysed side causes considerable hindrance to the locomotion of the animal. After the operation it fell on the well side on account of the rigidity of the opposite one. This contraction, in all respects, is very similar to the spinal epilepsy, first observed by M. Brown-Séquard in certain cases of localised dorsal myelitis, and which has since been observed many times. This spinal epilepsy is often accompanied with a very notable contraction, and sometimes the simple traction of the great toe causes this phenomenon to disappear. This fact is interesting, and has actually been observed in the dog experimented upon. M. Brown-Séquard thinks that in burning the surface of the brain there followed rapidly an alteration of the functions of the cord. Following out the same line of research, M. Brown-Séquard has seen, after the complete section of the neck of the rabbit, or the ligature of all the large vessels of that region, all the four members seized with convulsions; but, if previous to the operation we have injured the brain, we sometimes see one of the members remain unconvulsed at the moment of the severance of the neck, and it is that on the side of the cerebral lesion. Cauterisation of the brain has therefore a rapid influence on the structure of the cord. According to M. Charcot, the secondary degenerations of the cord are of slow development. On the contrary they actually are very rapid in their appearance. It is also to be remarked that it is the right side of the brain that has the most influence in the production of these symptoms; the effects are much less marked with lesions of the left side.

M. Brown-Séquard also called attention to the fact that the paralysis of the lower limbs from cauterisation of the cerebral surface did not produce the same deviations in the direction of the toes as to the section of the great sciatic. Motility may reappear after awhile in the paralysed muscles, but fails to do so in many cases. A last point insisted upon by Dr. Brown-Séquard is the loss of the muscular sense; the animal forgets, in effect, its paralysed limb.

In the discussion following, M. Hayem asked how soon the paralysis followed the injury. On the answer of Brown-Séquard, that it followed very rapidly, M. Hayem thought that the phenomena might be due to a meningo-myelitis, by rapid propagation of the inflammation from the cerebral membranes to those of the cord, rather than to a nervous lesion properly speaking. The symptoms described by Dr. Brown-Séquard were indeed very similar to those of meningo-myelitis.

In reply, M. Brown-Séquard said that, according to M. Hayem's view, the same phenomenon should appear on the side of the members, which was not the case. Moreover, he did not find inflammation of the meninges. M. Hallopeau had noticed in a patient suffering from cerebral hæmorrhage a very rapid loss of reflex action. This symptom followed the next day after the attack. Further, the paralysis was on the same side as the lesion. There might be, therefore, produced a phenomenon of arrest of the action of the cord, very rapid under the influence of the cerebral lesion, even before the secondary degeneration of the cord could be produced. M. Dupuy, after section of the great sympathetic, had seen an atrophy of the cerebrum, cerebellum, and the cord of the corresponding side. The brain had been removed four months after the section. M. Brown-Séquard had already presented examples of the atrophy of the two cerebral lobes after section of the sympathetic nerves. In a guinea pig he divided only one sympathetic, and there resulted not only atrophy of the corresponding side of the brain, but also atrophy of the eye of the same side. The same thing occurred in regard to the eye after cauterisation of the brain. But it is difficult to understand why the division of the great sympathetic produces atrophy of the brain as its consequence. We should have, on the other hand, an hypertrophy of the organ, for section of the sympathetic increases the circulation by vascular dilatation. It is true that M. Vulpian admits that the phenomenon of vascular dilatation is followed by contraction, and hence anæmia, and he may thus explain this atrophy. But M. Brown-Séquard rejects this explanation, and regards this relation between the brain and the section of the sympathetic as paradoxical. M. Chouppe cited the case of a patient suffering from cervico-brachial neuralgia, on whom he had made a cauterisation with the red hot iron over the superior portion of the dorsal cord. This operation was soon followed by symptoms of a very active congestion in the eye of the side corresponding to the cauterisation.

At the session of the Société de Biologie, Nov. 27th (rep. in *l'Union Médicale*), M. Brown-Séquard gave a general *résumé* of the lectures delivered by him, at Boston, last year. He said:—When we study the observations of cerebral lesions in man we find that, with the injuries at the same point, the symptoms are sometimes very different, and sometimes there is a complete absence of symptoms. Thus in the case of Abercrombie the complete destruction of one cerebral lobe caused only a little headache, and slight

troubles of vision, sensibility, and motility of the members remaining intact. In the presence of such facts M. Brown-Séquard refuses to admit that such restricted portions of the brain preside over certain functions, as is held by Gall, Broca, Fritsch, and Hitzig. It is much more probable that the cells which have to do with the same function are scattered throughout the encephalon, that they are connected with each other, but not grouped at a single point. In fact, if we make sections so as to progressively remove the cerebral substance, we sometimes produce no paralytic phenomena. That only follows the total ablation of a hemisphere.

M. Brown-Séquard confirmed by his experiments the results already known of inflammation of certain parts of the brain—such, for example, as the alterations of the lungs and intestines. He showed how even the most minute lesions, almost invisible, in fact, of the brain, in the convolutions as well as at the base, may accompany hæmorrhages or ulcerations of the viscera.

Following out his researches on cauterisation of the brain he had discovered that the cautery of the same cerebral region in two dogs, caused in one paralysis of the anterior, and in the other of the posterior members. The lesion of the same part of the brain may therefore produce different effects. Further, the lesion was unilateral, which shows that an injury on only one side of the brain may produce paralysis of both sides of the body. M. Brown-Séquard also noted two other interesting facts in one of the dogs experimented upon. There were, on the one hand, a dilatation of the chest of the side corresponding to the cerebral lesion, and, on the other hand, the appearance of an epileptogenic zone extending from the chest to the abdomen.

At the same meeting M. Dejerine exhibited the brain of a dog, showing a nearly complete destruction of the right hemisphere. This hemisphere was replaced by a cystic pouch, of the size of a clenched hand, having caused on the corresponding side of the cranial vault a considerable protuberance. The cerebral peduncle of the corresponding side, as well as the pyramid of the opposite side, were affected with a very marked secondary degeneration. During life—and there is the interesting point of the communication—the animal, whose sensibility and motility were very carefully examined, showed no special symptoms, and seemed to be in very good health.

At a meeting of the Société de Biologie of Dec. 4th (rep. in *l'Union Médicale*), M. Brown-Séquard recalled the fact that in 1850

he had obtained symptoms of locomotor-ataxia in birds, from injuring or exciting the grey substance at the origin of the sciatic nerve. He exhibited pigeons in which he had performed the same experiment with like results.

The grey matter at the origin of the sciatic has been very carefully examined by M. Pierret. According to him it is composed in great part of connective tissue and fatty matters, but shows no trace of nervous elements. Hence it follows that it is not the grey nervous substance. Now then, can the injury of this region induce disorders of co-ordination? How is it there exists at this point so intense a reflex power? Up to the present time M. Brown-Séquard had thought the reflex excitability would be the greater, the more abundant the grey nervous matter. But he was forced to admit now, since the researches of M. Pierret, that the grey substance, just described, possessed no nervous elements, and that it had only the appearance without the structure of the grey nervous substance, properly so called. M. Brown-Séquard was thus led to believe that it is the dura-mater that presides over co-ordination. Nevertheless, it is possible that the greyish substance plays a part of co-ordination, and that the titubation may be produced under the influence of the excitation of the dura-mater propagated from this substance.

At the same meeting M. Joffroy offered an interesting communication bearing on cerebral localisation, which with the discussion that followed was reported in the *Gazette des Hôpitaux*, No. 143, 1875. A man, aged twenty-four, presented every symptom of general paralysis of rapid development, which had come on within three or four months. In the latter part of this time especially, the accidents succeeded each other with the greatest rapidity; the man presented a condition of great enfeeblement constantly increasing—the sensibility being scarcely affected while the disorder of the intellect was very marked. He had very great difficulty in speaking. A very marked tremor appeared in the muscles of the face, and the same phenomenon was observed in the arm of the left side. In the presence of such symptoms the diagnosis was easy, not dubious. During the last fifteen days the man had suffered from numerous apoplectic attacks, which were followed by a coma persisting until death. On each buttock there was a scar, but that on the right was much longer than that on the left, and the two joined each other over the sacrum. At the autopsy the meninges were found thickened, adherent in many places to the grey sub-

stance of the brain. Nevertheless, it was rather easy to decorticate the anterior lobes of the two sides, but it was impossible for the posterior ones, where the lesions were much more pronounced. These cerebral and meningeal lesions were especially marked in the posterior lobe of the left side. It was easy to see that they had made great progress in the later periods. M. Joffroy believed that there existed a manifest relation between the lesions of the posterior lobes and the lumbar eschars; in fact, the cerebral lesion was more pronounced on the left side, and the scar on the right was more extensive than that on the left side.

In 1869, while *interne* under M. Charcot, M. Joffroy had observed an analogous fact; it was also in the case of a patient who had died within a few days after having undergone a general exhaustion, with preservation of motility, and who was troubled with a deep and very extensive sore on the buttocks. At the autopsy there was found a very small hæmorrhagic nucleus in the posterior part of the ventricle. Recently, at La Pitié, he had again observed a similar case. A woman, aged forty, had an apoplectic attack, rendering her hemiplegic. This hemiplegia gradually disappeared, and movements returned, but at the same time the general condition became worse, and when brought to La Pitié her state was such that M. Joffroy thought at first that it was a case of typhoid fever; she was in a kind of stupor, talked with difficulty; there was a general weakness; and, finally, there was a single eschar on the left buttock. This patient died in a few days. At the autopsy there was at first found no lesion of the brain, but by slicing it into very thin sections a minute patch of softening, the size of a hazel-nut, was found in the posterior portion of the right hemisphere. M. Joffroy thence concluded from these facts that there exists a manifest relation between trophic disorders and the posterior portion of the brain; he deemed also that it might even be possible to determine what special region in the brain presides over trophic disorders. The lesions of the anterior portion are especially related to troubles of motility. In concluding, M. Joffroy presented some considerations on the nature of the lesions we observe in the cord, in cases of trophic disorders, which consist in a secondary degeneration especially affecting the lateral columns.

M. Charcot observed that the questions of cerebral localisation were still subjects for study. It is only in recent times that this question has been placed where it should be. In fact, it is only in

very recent times that we have found a process of study which permits us to arrive at truly scientific considerations. First of all, we must make ourselves thoroughly acquainted with the anatomy—the topography of the brain. Up to the present time we have not always been able to define the locality of the lesion, but now, in very many cases, we can do this with accuracy. The parts of the brain that are least known are the posterior lobes; they are habitually silent as regards clinical manifestations. In cases of apoplexy, for instance, located in these lobes, what do we observe?—a hemiplegia, mobile and transitory, frequently barely appreciable, and this is all; for there are cases unlike those mentioned by M. Joffroy, in which we do not find eschars. Therefore, in those cases in which we only observe this transient hemiplegia as a symptom, we have many chances of being right, if we locate the lesion in the posterior columns. M. Charcot declared himself a decided partisan of the theory of cerebral localisation; he believed that he could safely affirm that certain lesions of the encephalon, perfectly limited and localised in certain points, always and necessarily produced the same symptoms. “But,” he added, “we must also take account of lesions at a distance, and those affecting several points at once; in these cases there may be variations, and they are not so clear. We have the diffusion through the whole reflex apparatus.” M. Charcot applied to these facts all the ideas given out by M. Brown-Séquard; but there are cases in regard to which he did not share that opinion, and in which he believed there was a constant relation between such and such a lesion, and such and such symptoms. For example, we cannot sever the cord without producing paraplegia. Finally, M. Charcot considered that the subject of cerebral localisation had been ill studied by the earlier observers; that it was a study to be taken up again, and one that had only commenced to be a little known very recently. Consequently, we need give no heed to the older observations. They proved nothing to the eyes of M. Charcot, except that the older writers had observed poorly.

M. Brown-Séquard regretted that he was unable to agree with his friend, M. Charcot. He admitted with him that a fixed lesion of a definite part of the brain gives rise to necessary symptoms. He was present to give a new proof of this fact by showing that puncture of the lumbar enlargement in the dog always gives rise to the phenomena of titubation of ataxia; in this point he agreed with M. Charcot. But the question is, to know whether the destruction

of this or that function corresponds with the irritation of any special part of the brain. M. Charcot holds that a special point of the brain, the internal capsule, always produces paralysis. But there are cases on record of the destruction of the whole opto-striated body of one side without any paralytic phenomena. M. Charcot should show that in these cases the facts were ill observed. The cerebral paralysees, according to M. Brown-Séquard, are phenomena similar to those which we observe when we galvanise the pneumogastrics of a dog; a cessation of activity consecutive to the irritation of a morbid portion of the brain.

M. Charcot stated that he regretted that he was not sufficiently acquainted with the dog, but he was pretty well acquainted with the human species in respect to the point under consideration. There are, he said, constant facts in the study of cerebral lesions. First, he would throw out cerebral tumours as having no special importance relative to the phenomena under discussion. The only lesions that can serve to clear up this difficult study are the more simple and circumscribed ones, such as the destruction of a part of the brain—the internal capsule for example—by a hæmorrhage; then we obtain direct phenomena, to use M. Brown-Séquard's own expressions. But when we have to do with a tumour, a softening, or a hæmorrhage with effusion of blood into the ventricles, we meet with indirect phenomena. The case changes altogether; we have convulsions, complex accidents, and unexplainable symptoms. We then come under the rule laid down by M. Brown-Séquard. But this rule applies, according to M. Charcot, only in certain complex cases. Besides these, there are others more simple, in which the localisation of the lesions in certain central points, and even in certain points of the cortex of the brain, is perfectly demonstrable.

M. Brown-Séquard asked of M. Charcot what are the localisations he allowed.

M. Charcot replied, that as to that question he desired to remain as a pathologist; he did not care to enter upon the field of pathological physiology. He proceeded by empiricism after a fashion, and not by experimentation, in the study of this important subject, and he believed he was safe in affirming, in certain determinate cases, that such a lesion of the brain produced such a symptom if it were simple, and such a syndrome if it were complex.

M. Brown-Séquard then asked M. Charcot what was, in his view, the portion of the brain, the destruction of which produced the loss of movement.

M. Charcot answered that the destruction of the anterior two-thirds of the internal capsule inevitably caused loss of power of movement, and that of the posterior third caused hemi-anæsthesia.

In a following session of the Soc. de Biologie, December 14, the discussion was renewed. M. Charcot, desiring to express himself more precisely than before, stated that a lesion of the anterior two-thirds of the internal capsule always caused hemiplegia, and that a lesion of the posterior two-thirds is accompanied with all the phenomena that he had described under the name cerebral hemi-anæsthesia—i.e., an alteration of all the senses of one side. Besides these localisations in the central masses of the brain, he admitted certain cortical localisations. Finally, he agreed with M. Broca that the faculty of expressing ideas by words had its seat in the third frontal convolution.

M. Laborde called M. Charcot's attention to the fact that M. Veyssiere had observed in dogs a cerebral hemi-anæsthesia under experimentally produced conditions similar to those clinically observed in man, and that pathological experimentation which M. Charcot seemed, perhaps, to undervalue, thus came to his aid in support of his views. As regards the communication of M. Joffroy, M. Laborde stated that some cases of meningeal hæmorrhage produced eschars, which might serve to aid the diagnosis of the affected side of the brain, and hence they did not coincide alone with lesions of the posterior lobes.

At the meeting of December 18 the discussion was still continued.

M. Charcot first disclaimed any lack of appreciation of experimental physiology. He thought, however, that the opinions of physiologists as to the brain and spinal cord could not be accepted without reservations. The experiments on the lower animals had been of service, but it is from man, or his nearest ally, the ape, that the facts of value to the clinician must be derived.

M. Brown-Séquard disagreed with M. Charcot, and to support his own views he found himself obliged to detail to the Society a number of observations. His design was to show that the cerebral localisations, as held at the present, are false. First, however, we must return to certain questions that govern the subject. The symptoms that we observe in cerebral affections, according to M. Brown-Séquard, are the result of this or that lesion on the parts adjoining the injured regions. Supposing, for example, a hæmorrhage in the third left frontal convolution, we may observe two

things, convulsions and aphasia—that is, an accident, the convulsions; and the loss of function, that of expression by speech. But in this case the convulsions are the result of a convulsivant power, located not in the seat of the lesion itself, but in a region in its vicinity where the fibres passing from it end. The same mechanism will serve for the aphasia, and in consequence the third frontal convolution is not proved to be the centre for speech. For both facts, the convulsions and aphasia, there is therefore the same mechanism and the same mode of production. If we examine the mode of production of the paralysis, said the speaker, we notice that it is in the great majority of cases the same as that of aphasia and convulsions. There are conductors in the bulb that serve for the transmission of the will to the muscles; if they are injured there will be a loss of function, a loss of motility. This is true in most cases, but the bulb may have other influences at a distance, which sometimes predominate, and then the effects will be different.

If we study what takes place in the brain itself, the internal capsule in particular, we also see the importance of this influence at a distance in the production of paralysis. A great number of facts show that paralysis may occur without any lesion of these centres. On the other hand, we see extremely limited lesions in a certain region followed by paralysis; and, again, we see very extensive injuries of the same parts without it. Hence, we must conclude that these centres are different in different individuals—a conclusion that is absurd. There are cases in which a limited lesion of the brain causes a facial paralysis of the corresponding side, and others where it is on the opposite side. There are cases of alternate paralysis corresponding to lesions situated above the pons. In the presence of these facts it is impossible to hold that the facial paralyses are dependent alone on the injury of a motor centre for the face. In fact, that would lead to the conclusion that this motor centre occupies all parts of the brain.

Finally, we have seen a limited lesion of the brain to produce sometimes paralysis of all the members on the same side, sometimes those of the opposite side, sometimes the upper, sometimes the lower members. M. Brown-Séquard did not insist on these facts, which, with the admission of the prevalent ideas concerning localisations, led to absurd conclusions.

He would show further that, as concerns localisations, experimental observations supported entirely the pathological facts noticed in man. In fact, the same variety of symptoms is met with in

animals when the lesion is known, and is produced under desired conditions. M. Brown-Séquard commenced the enumeration of over two hundred observations, which tended to show the existence of hemiplegia, with a lesion on the same side as the paralysis.

M. Charcot thought it impossible to continue this discussion under these conditions. Among the observations cited by M. Brown-Séquard, there was not a single one which he did not find vitiated with all kinds of errors. M. Brown-Séquard mentioned only exceptional cases—not those seen customarily—and attempted to build a theory on them. For his own part, on the other hand, he would advance only well-known and usual cases, rejecting altogether the exceptional ones. To speak only of the first case given by M. Brown-Séquard, M. Charcot said that the observation was disorder itself, and that it was impossible to draw any conclusion from it. The facts are contradictory and altogether exceptional, and such as M. Charcot had never observed in the sixteen years he had studied these questions at the Salpêtrière. It would not be difficult, taking up each observation, to show that they were all defective, and to destroy all their value. The discussion is therefore impossible, since M. Charcot rejected all the facts on which M. Brown-Séquard supported himself. Adopting his colleague's own expression, M. Charcot admitted that, in the symptoms consecutive to cerebral lesions, it was necessary to distinguish direct and indirect phenomena. But the former are the rule, the latter the exception, on which it is impossible to build general laws.

M. Brown-Séquard had intended to show, supporting himself on some hundreds of observations, the possibility of the production of paralysis of the side corresponding to the lesion. There was one well known, which M. Charcot could not deny—that of M. Diday (de Lyon). Many others as irrefutable might be quoted, but a single exception is sufficient to render false a theory. Moreover, cauterisation of the brain in animals caused the same result. He had communicated numerous observations in which cauterisation of one side of the brain produced paralysis of the same side. We know that M. Longuet explained these interesting facts by defect of the decussation in the pyramids, but this had never been met with by any anatomist. M. Charcot repeated that in all the numerous cases he had had the opportunity to observe, he had never noticed those contradictory to the theory he sustained. All those cited by M. Brown-Séquard are therefore defective in either a clinical or pathologico-anatomical point of view.

At the subsequent sessions of the Society the discussion was still continued. M. Luys came to the support of M. Charcot against M. Brown-Séquard, stating that in all the autopsies he had made, he had never met with an exception to the rule that the phenomena met with during life always correspond to lesions of the opposite side. The cases on which M. Brown-Séquard supported himself evidently did not meet the requirements of a valid case, as demanded to-day. He should therefore submit his contrary facts to the examination of his colleagues, and not be content with old observations, of no value at the present time. M. Luys then alluded to a class of facts supporting the views of M. Charcot—the cerebral alterations consecutive to old amputations. He had found in autopsies of old persons, who had many years previously undergone amputation of the shoulder or a limb, atrophy of the opposite side of the brain, and had already collected a dozen of these cases. It was produced only some fifteen or twenty years after the amputation. Those parts of the brain which received impressions from the member, and transmit to it the orders of the will are silenced, and, like every disused organ, they undergo atrophy. He exhibited photographs illustrating some of these cases, which are additional supports to the law of the discussion.

M. Brown-Séquard said that it was exactly his intention to prove that cases of direct paralysis really did exist. This frequency had nothing to do with the question; a single instance would suffice, and he believed he could quote an authority disputed by no one. He would cite a case published in the "*Archives de la Société de Biologie*," by M. Charcot himself. This was a case of tumour in the right hemisphere, which, during life, produced a paralysis of the right side of the body, and he asked M. Charcot if he was not correct in his citation. M. Charcot said he recollected the case very well. The case was old, and M. Charcot of to-day did not exclude M. Charcot of former times from the number of authors whom he rejected relatively to the question of cerebral localisations. This observation, though his own, was of no more value than the others, except that it only dated back ten years. It should be remarked, moreover, that it was a case of tumour, and such cases were unfitted for study, since they displaced the tissues without destroying them, and were accompanied with no definite phenomena.

M. Brown-Séquard regretted to see M. Charcot so severe on himself. Experimentation on animals enabled us to decide this

question incontestably. If we burn the surface of the brain on one side, we can discover that a certain number of muscles will be paralysed on that side. But in these cases the lesion is produced voluntarily, and we know that no other exists, or at least if there are others on the opposite side, we know that they depend on the ones first produced, which are thus the primary cause of the paralysis. M. Brown-Séquard next referred to cases in human pathology, such as aphasia with hemiplegia, in which we cannot do otherwise than connect the two symptoms, and related numerous cases of the kind. He stated also that there exist incontestable cases of cerebral hæmorrhage in which the autopsy showed the lesion on the same side as the paralysis. He presented before the Society a brain of a dog, which had undergone cauterisation, that had been followed by direct paralysis. He had carefully examined it for other lesions, but found none. He next began to review the facts in favour of his view of the subject, reported by Cruveilhier, Bell, Diday, Desgranges, Hillairet, Gintrac, Rostan, and others, and those of softening, followed by direct paralysis, two cases of which were reported by Dechambre, and one by Henry Day. He also found support for his argument in the extent of the lesion. There are many cases in which nearly all of one hemisphere was destroyed; such have been reported by Messrs. Broca, Freschi, and Rostan. In other cases of wound of the brain suppurating during life, paralysis of the same side existed, and others in which the paralysis diminished at once with the discharge of the matter, and it was impossible in those cases to refer the paralysis to anything but the abscess on the corresponding side. In another case a tumour of one side of the head caused temporary paralysis of the same side on the application of pressure.

M. Brown-Séquard then stated that he had already striven to show, in numerous papers, that a lesion of the base of the brain often causes paralysis of the corresponding side. He had more than fifty cases in which the symptomatology was so clear and precise that he had been able to announce that the lesion would be found on the same side as the paralysis, and the autopsy confirmed this statement. There were also many cases in which a paralysis of the fifth nerve existed with a paralysis of the corresponding side of the body. In these cases the paralysis is usually incomplete; it occupies indifferently the upper or lower limb; is almost always accompanied by slight contracture, and often with special trophic disorders. Besides these facts, M. Brown-Séquard cited others

apparently as decisive. In one case the pons was almost entirely destroyed, and replaced by a tumour, with paralysis of the corresponding side; in another a tumour occupied a whole half of the medulla, with a like result. A number of other cases might be cited.

After M. Feray had presented some facts relative to the topography of the brain, M. Charcot observed that none of the cases quoted by M. Brown-Séquard were observed with the anatomical precision possible with modern appliances and methods.

M. Pitre communicated three observations of cerebral lesions; the first was one of aphasia and right hemiplegia, in which nothing was observed at the autopsy until after the most minute and careful examination, when the lesion was affecting a portion of the third frontal convolution, the whole of which was found, under the microscope, to contain granular bodies. This case, but for the care in examining it, might have been recorded as opposed to the theory of localisations. The other two cases were of lesions of the internal capsule, diagnosed correctly *ante mortem*.

M. Charcot said these cases might be multiplied, and he would return to them later. But, in a general way, we may admit to-day that there are certain symptoms which always correspond to lesions of the same part of the brain. Taking one part of the brain—the internal capsule—he divided it into two parts, one comprising its anterior two-thirds, and the other its posterior third. If a destroying lesion occupies about the anterior third of the internal capsule, we observe a motor hemiplegia, permanent, durable, and nearly always incurable. If, on the other hand, the lesion bears on the corpus striatum, we have a transient motor hemiplegia. If it is in the posterior third, the symptoms will principally consist in a permanent crossed hemi-anæsthesia, if the lesion is destructive; but if there is a hæmorrhage, for example, in the thalamus or in the extra-ventricular muscles, distending the surrounding tissues, we have then a transitory hemi-anæsthesia—in fact, at a given time the internal capsule resumes its functions, and the hemi-anæsthesia disappears. There are results which can be diagnosed during life without fail. M. Brown-Séquard remarked that M. Charcot had himself published a case absolutely contradictory of his present views—a transient paralysis following a destructive lesion. It was published in the thesis of M. Lepine. He then remarked that M. Vulpian had given a rational, and possibly a correct, explanation for many cases of direct paralysis—namely, the

existence of a ventricular dropsy of the side opposite to the lesion, and had thus remitted these cases to the ordinary crossed paralysis. But there are many cases in which the absence of ventricular dropsy has been determined, and others in which it was observed to be greatest in the ventricle of the injured side. M. Vulpian's explanation is therefore correct for some cases, but not for others.

Another explanation has been offered of direct paralysis, which has *à priori* apparently much value; it is the occasional absence of the decussation of the pyramids. But we should first determine whether this decussation is as important as has been taught. M. Brown-Séquard had for a long time sought to show that this decussation included the fibres that carried the impulses of the will to the muscles. But he had since recognised that very few of these fibres are found in the pyramids at the level of the decussation. There are, moreover, many experimental and clinical facts that prove that the pyramids do not give so great an influence over voluntary movements; Magendie has shown that section of one pyramid has no effect on movement. The section of both causes a certain embarrassment to forward motion.

Schiff has made a complete section of the two pyramids, and found that voluntary movements were not lost or even diminished. Vulpian made a longitudinal section of the medulla and found motility only a little diminished, not completely lost as it should be if the pyramids were completely formed of motor fibres. M. Brown-Séquard himself had performed many experiments, and observed that section of one pyramid produced hardly any paralytic symptoms, and that that of both was not followed by any very well-marked paralysis. He concluded that they had little to do with voluntary movement, if anything. As to the clinical facts he cited many cases in which lesion of the pyramids was without influence on voluntary movement. In one case of Vulpian's there was a lesion of the left crus, and a notable atrophy of the pyramid of the same side without loss of voluntary movement; in another case all the fibres of one pyramid were destroyed without paralysis of the superior members (the lower ones being paralysed on account of a myelitis co-existing with the cerebral alterations); two other cases were given, one by Cruveilhier, the other by Bouchard. It results from these that the pyramids are not the sole routes of the transmission of the orders of the will, and the default of their decussation is not sufficient to explain the existence of direct

paralysis. M. Brown-Séquard here offered some new considerations on the origin of these direct paralysees.

He next called the attention of the Society to the relation existing between convulsions and paralysees. According to him the production of a convulsion and that of a paralysis are two facts of the same order dependent on the same cause.

He proposed to demonstrate in a future communication that there is but one part of the brain the absence or destruction of which is incompatible with the persistence of the cerebral functions. One half the brain alone sufficed for all these functions; in other words, each half was functionally equal to the whole.

M. Charcot said that he agreed with M. Brown-Séquard in regard to the relation between paralysis, contractures, and convulsions. They are, so to speak, complementary phenomena. It is in the common cerebro-spinal meningitis that the relation of these phenomena is especially to be observed. But he did not agree with M. Brown-Séquard in the interpretation of these phenomena as regards the lesions that produce them. Being given, for example; a hæmorrhage when it occurs in the deep central masses (the opto-striated body, the thalami, internal capsules), without touching the ependyma, there is never contracture, but if it affect the cortex then the first phenomena observed are contractures and convulsions followed by paralysis and resolution. These are the rule, based not on exceptional cases, but on facts of every-day observation.

M. Laborde presented two dogs in whom he had produced cerebral hæmorrhage under conditions as nearly similar to those in man as was possible. The first had been experimented upon a month ago; it still had a facial hemiplegia of the side opposite the lesion (hæmorrhage near the opto-striated body), a motor paralysis of the right side, and a very well-marked hemi-anæsthesia of the left. This dog had, also, almost directly after receiving the lesion, a kind of very marked hemichorea of the right ear. To-day these phenomena, still marked, are complicated with contractures of the two anterior limbs, especially noticeable in that of the left side, and rather pronounced ataxic symptoms of the posterior members. The second dog, experimented upon in a like manner, presents only facial hemiplegia opposite the lesion, and a hemi-anæsthesia of the body on the side corresponding to the injury. The experiments were performed by drilling a minute hole in the skull, and injecting blood by a small canula into the desired

situations in the brain. The autopsies of the dogs would be reported at a future time.

M. Remond had likewise produced paralysis in dogs, but by another method.

M. Charcot said that when we speak of paralysis we should understand and distinguish the transitory from the permanent forms. When a hemiplegia, for example, is permanent—*i.e.*, it lasts at least two months, and, after that time, motility begins to reappear, we then see choreiform movements in the upper and lower members, especially the face; these movements are nearly always accompanied with hemi-anæsthesia, an exact reproduction of the hysterical hemi-anæsthesia. But this hemichorea, called by M. Charcot post-hemiplegic, corresponds to a localisation in the posterior third or fourth of the internal capsule, while the lesion which produced the hemiplegia occupies the anterior two-thirds or three-fourths.

M. Veyssiere, a pupil of M. Charcot, by injuring this same region directly in the dog, has been able to produce not only the hemi-anæsthesia but also the hemichorea. Moreover, in studying the common form of chorea, M. Charcot found in hemilateral chorea the frequent co-existence of a hemi-anæsthesia exactly comparable to that in hysteria. There exists, therefore, an evident relation between hemichorea and hemi-anæsthesia.

M. Brown-Séquard remarked the existence of a hemi-anæsthesia of the side corresponding to the lesion in the interesting observations of M. Laborde. In the case of the superficial cauterisation of the brain he had himself presented, he had obtained a diminution of the muscular sense on the same side, but not the complete disappearance of sensibility.

Continuing the discussion on Jan. 29th, M. Brown-Séquard said that he had never met with a very clear case of paralysis without anæsthesia, and even without hyperæsthesia. The study of the disorders of sensibility had been, according to him, too much neglected. Anæsthesia alone, without paralysis, is rarely met with—out of eleven or twelve thousand cases he had met with only seven or eight.

In cases of direct paralysis he had nearly always found also direct anæsthesia, and he cited numerous cases. There were also cases of crossed anæsthesia. He next mentioned some very rare cases in which only anæsthesia was observed, and a case of Abercrombie in which also the autopsy revealed a large abscess in the half of the brain corresponding to the lesion.

M. Brown-Séquard, in giving these facts, added that he believed he could say in regard to anæsthesia all that he had said in regard to paralysis.

M. Charcot admitted that anæsthesia existed much more frequently than is generally believed in affections of cerebral origin—permanent hemiplegias, for example. As in hysteria it exists without the knowledge of the patient, and may pass altogether unperceived unless sought for. Nevertheless, M. Charcot did not consider with M. Brown-Séquard the co-existence of anæsthesia with paralysis as a rule; it would be easy to test the matter at the Salpêtrière, where there were never less than four hundred hemiplegics.

In the last reported discussion in this debate, M. Brown-Séquard called up the subject of convulsions in cerebral lesions, and stated that there were many cases of direct convulsions—*i.e.*, on the same side as the lesion. Lallemand explained these by the existence of a meningitis, and he himself had long favoured this opinion, but had abandoned it when he found that convulsions depended on other causes than affections of the cerebral membranes. In many cases of direct convulsions the autopsy showed no trace of direct convulsions.

In reply to a question of M. Charcot, he said that authors did not always speak definitely in regard to the exact form of convulsions—some employing the term convulsions, others that of convulsive movements, &c.—but he cited only genuine cases.

He stated also that besides convulsions there were also contractions, cataleptic attacks of prolonged spasm, followed, or more rarely preceded, by chronic movements on the side corresponding to the lesion. Some observations he said were of incontestable value. When, for example, death follows rapidly a fracture of the cranium, we cannot do otherwise than admit the connexion between the accident and the subsequent phenomena.

Unilateral convulsions of the side opposite the lesion are so common that they must be noticed. M. Brown-Séquard remarked that in these cases the seat of the lesion was very variable. He did not know of any part of the brain that might not cause them on one side or the other, or both. It is the same with the face. There are, he said, infinite varieties in the grouping of the muscles that are successively convulsed from cerebral lesion; thus, there may be convulsions of the face and of the two upper extremities, or the face and the two lower limbs, &c. He would say the same

as he had said of convulsions in regard to paralysis, contractions, tremor, &c. He would show cases where lesions above the protuberance had given rise to a deviation of the head towards the well side—the reverse of the usual rule. He applied these views to all the losses of cerebral functions, to aphasia, and amaurosis. He had seen cases of aphasia with right-sided cerebral lesions.

Next, taking up his own peculiar physiological ideas, M. Brown-Séquard maintained that the relation between the muscles and the will-centres were altogether different from what is generally supposed. All the so-called motor fibres, he said, passing or not from cells, are not necessary for the accomplishment of a voluntary movement. A single one may suffice; and the same, he held, is true of the centripetal sensory fibres. He thought he had shown that the destruction of a certain number of fibres in the cord or medulla did not implicate functions. He held that a very small number of fibres served to keep up the communication required by any function, and that the left half of the brain alone sufficed for all cerebral functions. He added, however, that we must take account of a sort of education of the left hemisphere which allowed it to control the function of speech. He thought, also, that the cells of the right half of the brain controlled more than the left the nutritive functions. But instead of holding that the cells endowed with special functions are grouped together, he held that they were disseminated over the brain, and quoted some experiments of Flourens in support of this view, in which he gradually sliced away nearly the whole cerebrum before producing paralysis. The conducting fibres, therefore, between the brain and cord are capable, under any irritation whatever, of producing alteration at a distance, causing paralysis, &c., and in this way only can we explain, according to M. Brown-Séquard, the various phenomena observed in man.

M. Onimus had repeated Flourens' experiments, and agreed with M. Brown-Séquard as to the difficulty of admitting voluntary motor centres.

M. Charcot said the difference between man and the lower animals was so great that it was difficult to establish comparisons. The brain had a much higher function and importance in the former than in the latter, and absolute comparisons were impossible.

M. Brown-Séquard agreed with M. Charcot, and said that he depended alone on the facts observed in man for the support of his theory.

M. Onimus closed the discussion with the citation of some observations of automatic movements in hemiplegic patients.

[This discussion well illustrates the conflicting views of perhaps the two greatest neurologists of the day. It will be observed that M. Brown-Séquard stands almost alone in the support of his peculiar views, which may well be called "novel," as he not only seeks to upset the recent conclusions arrived at regarding the existence of motor centres in the cerebral cortex, but also to overthrow the older and hitherto universally accepted doctrines of the crossed action of the cerebral ganglia. In his lectures before the College of Physicians he has again enunciated these views. Attempting to show by the conclusions which he has drawn from accumulated facts, that the doctrines that are held regarding the production of paralysis can no longer be sustained, he states that the symptoms of brain disease do not depend on the seat of the lesion, that from the medulla-oblongata up to the psycho-motor centres, any part can be destroyed without any loss of function, so that on the one hand paralysis can appear wherever the disease is located in the brain, whether that part is considered a centre for voluntary motion or a conductor starting from the centre going into the muscles, and, on the other hand, that when disease is located in those parts which are considered as absolutely essential to the transmission of the order of the will or correction of the order, those parts can be destroyed without any paralysis—at least without any marked paralysis, if we take the great mass of cases. He further puts forward the view that every paralysis due to an organic disease in the brain is caused by inhibition, or arrest of function, and that the paralytic effects will vary according to the excitability of the part affected. While there can be no doubt that there are numbers of cases on record apparently bearing out these views, in which it is stated to have been difficult or impossible to locate clinically the cerebral mischief, or where the *post mortem* examination either revealed no gross lesions to account for the symptoms or, if it did, showing them to exist quite away from the position where it would have been expected that they should be found—yet, many of these apparently anomalous cases, could they be but reinvestigated with greater precision and by finer methods, both *ante* and *post mortem*, would show that the anomaly was more apparent than real, and lead to conclusions perhaps opposite to those now drawn from them. It is on such cases, it would appear, that M. Brown-Séquard has

founded his doctrines; and for the causes just assigned M. Charcot rejects both the cases, and hence the conclusions drawn from them. We cannot, however, lightly disregard the clearly expressed opinions of such a man as M. Brown-Séquard; and his views should not be cast aside without full examination into their merits; and while, for the present, we must hold that their truth has yet to be demonstrated, it behoves all to search as opportunity arises, without prejudice, and with minuteness, for facts which may, when accumulated, tend in time to prove the truth or falsehood of these new doctrines.—*Rep.*]

LOCAL TREATMENT OF BURNS.

Of all local applications in Dr. B. Brown's experience, iodoform, prepared with extract of conium and spermaceti ointment, with a small portion of carbolic acid, appears to meet the several indications best. This agent, he says, acts as a certain and most effective sedative on the painful and irritable exposed surface, and at the same time as an antiseptic. It reduces irritation, inflammation, and suppuration when in excess, in a remarkable manner. It converts a most painful and irritable wound into one comparatively painless with promptness. This remedy is also an excellent promotive of healthy action and of the healing process. The use of this preparation has another advantage—it renders the constant use of anodynes unnecessary. The following formula has been found the best:—*R.* Iodoformi, 3ij; unguent. cetacei, 3i; ext. conii, 3iss; acid. carbol., gtt. x.—*M.* This ointment is spread twice daily on soft linen, and applied over the inflamed surface, and then enveloped in oiled silk. No other dressing is necessary. The only objection to the use of this remedy is its peculiar odour. In those cases of burns attended with great *dryness* of surface from destruction of vitality and want of exhalation, the wound, before being covered with the iodoform ointment, should be coated over with the common linimentum calcis. This affords a soft and moist dressing, which in no wise^d interferes with the action of the iodoform.

PEROXIDE OF IRON CALCULUS.

At the Société de Biologie M. Cazeneuve showed a very rare calculus that had been passed by a patient after forty hours intense pain along the track of the ureter and bladder. In shape and size it resembled a nut, and when submitted to chemical analysis it was discovered to consist of almost pure peroxide of iron. Neither the history of the case nor the symptoms afforded any suggestion how so much iron could have accumulated in the kidney.—*Le Progrès Médical.*

S. W.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—HENRY KENNEDY, M.B., F.K.Q.C.P.

Secretary—E. H. BENNETT, M.D.

Thoracic Tumour simulating Aortic Aneurism.—DR. FINNY said: The diagnosis of intra-thoracic aneurism is, at all times, a matter of great interest, and at no time a matter of ease. The present case illustrates this, and also presents a new difficulty in the diagnosis on which sufficient stress has not been heretofore laid. These specimens were taken from the body of a Frenchwoman, aged twenty-two years, who was admitted into the City of Dublin Hospital on the 6th of December last. Six weeks before her admission she had been delivered of a child in Sir Patrick Dun's Hospital, after a labour more than usually difficult. It was followed by pains in the right side of the chest; and for these pains she sought admission into the hospital. It was then found that she had pleurisy without effusion on the right side. Her chest was carefully examined; no percussion dulness was observed anywhere abnormally, but a loud systolic bruit was heard in the neighbourhood of the pericardium, towards the base of the heart, which was unaffected by change of posture. Her pulse was small and feeble, and alike in both radials.

On the 18th of December there was noticed a visible pulsation close to the left side of the sternum, in the second intercostal space. Dulness was noticed over the same region, while the beat of the heart was in its normal position. The left radial was noted as markedly smaller than the right, and the left pupil was observed to be larger than the right. Ten days later, in addition to those symptoms, she had profuse perspiration, which was confined to the left side of the face and forehead. On the 1st of January, when she came under my care, Dr. Benson suggested the possibility of the existence of thoracic aneurism, at the same time suspending his opinion for further observations, as the age of the patient, the absence of any history of syphilis, or of direct violence to the chest, or of the habit of intemperance, discountenanced such a view.

She was, on January 1st, seemingly in very good health, plump and well-looking, and complained of nothing but pains occasionally in the right side of the chest. She had no cough or fever, and with the exception of the thoracic pulsation and murmur she seemed quite well. During the next three weeks she was carefully watched and examined every day by myself and some of my colleagues, and was also seen by several other medical men, on whose judgment and opinions I lay great stress. After many consultations and much hesitancy we were unanimous in coming to the conclusion that it was a case of thoracic aneurism, and our idea was that it was a case of false aneurism of the left side of the ascending portion of the arch, which had bulged forward and was causing pulsation in the second intercostal space. The shape and position of the primary and secondary sacs was further supposed to be such that the blood was diverted from passing into the left subclavian artery; and thus the small pulsation on that side was accounted for. The points on which this diagnosis was based are those usually relied on as signs of thoracic aneurism—viz., the state of the patient's general health, the existence of an inter-thoracic tumour, and the evidences of pressure. The plump healthy look of the patient, and the absence of all constitutional disturbances, such as cough, night-sweats, or hectic, excluded the idea of cancer, or tubercle, or of enlarged glands which might be associated with those diseases. The tumour was small but very distinct at the second intercostal space. The pulsation was diastolic or single, and was rendered visible by placing pieces of paper or the stethoscope over it; at the end of the pulsation the impulse seemed very distinctly vibratile. It gave one the sensation of a large sac filled with a great deal of fluid, and very close to the surface of the skin.

The dulness on percussion—and this was the only point to render the diagnosis doubtful—extended over a larger area than the impulse corresponded to. It extended from the middle of the sternum, at the level of the third rib, to the left sterno-clavicular articulation, and for two inches from the end of the clavicle, and then in a straight line to the third rib. Outside these limits the chest was perfectly normal on percussion. The murmur was heard over the superior part of the pericardial region, and was intensified at the lower edge of the clavicle. Its character was loud and ringing, and it gave the idea of being caused by some large cavity. It was not heard in the carotids, or down the spine. The evidence of pressure consisted in the absence of vesicular or other breathing in the space where dulness existed, while over the whole of the left lung the respiratory murmur was more feeble than natural, and was also much less than in the right lung, where the respiratory murmur was puerile in character. Just outside the region of dulness on the left side, the inspirations and expirations were prolonged, and a sound could be heard as of air whistling through some obstruction. The idea of pressure on

the bronchial tubes was further confirmed by finding the whole of the left side comparatively less filled with air than the right side. Measurements of the chest were taken on the 1st of February, and the diagnosis was still further confirmed by finding that the left side was two inches smaller than the right at the xiphoid, and two and a half inches above the mammæ. The unilateral nature of the foregoing signs, and the absence of all fever or other constitutional disturbance following a tedious delivery, presented a group of signs and symptoms which, on the one hand, excluded the possibility of phthisis, or a cancerous tumour, and pointed on the other to the diagnosis of a rapidly growing false aneurism of the aorta. This opinion was strengthened in the further progress of the case by the very variation of the signs and symptoms, such as is known to occur in aneurismal tumours. For example, the pulsation which, on the 18th of January, was very distinctly felt and seen, was, on the 26th, much less evident, while the left radial pulsation had become much more full and distinct. On the 1st of February she had a great deal of cough, and evidences of inflammatory softening of the left lung set in. These signs were believed to be due in part to the imperfect expansion of the lungs, produced by pressure on the bronchial tube, and in part to pulmonary phthisis, which, Dr. Stokes states, is one of the commonest complications of aneurism. On the 12th of February the softening and breaking down of the lung was more evident, as over the whole of it muco-crepitant râles could be heard. On the 18th of February spasmodic laryngeal cough set in, and continued incessantly for thirty hours, day and night. This cough was of a shrilly barking character, and the "stridor from below" (Stokes) could be heard at the fourchette of the sternum; but neither at that time, nor at any other, was there aphonia. Ten days later, long after the laryngeal symptoms had passed away, dysphagia set in, and the patient complained of obstruction in the throat, so as hardly to swallow fluids. In its turn this symptom passed away, and half an hour before her death she was able to drink freely a large quantity of claret and water. She sank with the usual symptoms of asthenia and exhaustion, and died on the 6th of March. The autopsy was made eighteen hours afterwards and was conducted by myself. On opening the abdomen we found a good example of cystic disease of the kidneys, both kidneys being well mottled with these cysts. Some of them are so large as to admit the first joint of the finger. It is probable that this cystic disease might originally have been congenital, and that after having been for some time in abeyance, afterwards became developed. I may mention that this cystic disease has not been known to be developed in adults at an earlier age than thirty years, and that Virchow and Förster, and others, believe the origin of it to be a congenital change due to obstruction of the uriniferous tubules and subsequent dilatation of them into pouches.

On opening the thorax, which by measurement after death confirmed the measurement taken before death, instead of an aneurism, which we expected to see, we found that there was dry adherent pleuritis on the right side, and a large mass of what turned out to be thickened pleura, with a vast quantity of lymphatic glands occupying the space where dulness existed, and lying upon and between the vessels in this region. The left innominate vein shows the position of the parts. These glands are in great numbers and enlarged, and lie between the pleura and the pericardium, engaging the course of the left phrenic nerve. Higher up we found a very large gland, the size of a large nut, immediately above the pulmonary artery, and engaging the branches of the pneumogastric nerve, the recurrent laryngeal branches of the pneumogastric nerve being pushed up by it, while the pulmonary and the cardiac branches are also engaged. This other mass of glands, making a large bunch, lay on the thin edge of the lung, which was pressed to the outside. On opening the lung we found in the apex a distinct chamber lined with a pyogenic membrane, large enough to receive a small orange or large walnut, while the rest of the lung was in various stages of softening.

Examination of the heart showed the right auricle and the right ventricle perfectly healthy. The pulmonary artery was in a state of dilatation; the pulmonary valves were thickened with fibrinous deposits, but competent to prevent regurgitation, and on looking closely there was found a very small fourth valve, which fitted in between the anterior and left valves, which is perhaps the commonest deformity found in connexion with the right side of the heart.

Further than this there was no evidence of organic disease of the valves except a slight stenosis of the aortic orifice. Turning to the aorta, it presents the usual appearance for the first two inches and a half; and on the junction of the transverse and descending portions we find that it is constricted or pressed upon seemingly by an enlarged gland, but is free from any atheromatous disease. Immediately beyond the orifice of the subclavian artery, just at the junction of the duct of Botalli (which is filamentous) it is constricted so as hardly to admit my little finger. By way of contrast I have brought portions of the thoracic aorta, taken, one from a small old man, and the other from a small woman, in order to show the difference between the ordinary size of these vessels and what we found in this patient.

I believe the cause of the pulsation to have been the dilated condition of the pulmonary artery conveyed through the glands; the pressure of the enlarged bronchial glands on its branches and on the aorta gave rise to the thrill and vibration, while the murmur, I believe, was produced by the roughness of the semilunar valve, and to have been intensified by the delay the blood found in passing through the pulmonary and aortic arteries. The loud ringing character of the murmur was due to the

neighbouring cavity in the lung. The larynx, which I here exhibit, is perfectly healthy, and free from any disease, and thus the laryngeal cough, dyspnoea, and stridor can only be accounted for by the pressure of the enlarged glands on the recurrent laryngeal nerve.

I feel, Sir, an apology is due to the Society for the length at which I have detailed this case, but as I believe the highest aim of all medical science and pathology is best served by our endeavouring to show what may be the real difficulties of the diagnosis of any pathological condition, as well as the best means of keeping clear of such pitfalls, and as by our errors alike by our success our knowledge is perfected, I have thought right to put the Society in possession of the peculiarities and the difficulties of this case, which proved so completely to simulate, by signs and symptoms, one of aneurism of the arch of the aorta.—*May 6, 1876.*

Aneurism of Aorta; Compression of Trachea; Collapse of Lung, with Hydrothorax à Vacuo.—DR. J. W. MOORE said: Dr. Finny has just laid before the Society a case in which certain physical signs simulated aneurism of the thoracic aorta, although *post mortem* examination showed that no such lesion existed. The case which I am about to submit is a remarkable instance of thoracic aneurism, in which many of the physical signs of the disease were wanting. We had an opportunity of seeing the patient only during the last two or three days of his life, and I certainly failed to make a correct diagnosis in his case. The man was sixty-seven years of age, a gardener by occupation. He had lived (according to his own account) a temperate life; in other words, he was not a hard drinker. He was a moderate smoker. For thirty years he had enjoyed the best health. Thirty years ago he had an attack of "brain fever." The only suspicious thing about him was a cicatrix on the glans penis, which looked as if it had been a chancre long since healed. For the last two months he had constantly complained of his breathing and of a cough. The cough was severe at times, chiefly so in the morning. He attributed his illness to a cold he caught from a heavy wetting, which was followed by cough and a smothering. His bowels were quite regular. Of late his appetite had been bad. His cough was hard and distressing at first; afterwards it was accompanied by a white frothy expectoration, and then it lost its hard character. He was admitted into the Meath Hospital on the evening of last Wednesday, May 3rd. On the next morning his condition was as follows:—There was a spot of capillary hyperæmia on each cheek, principally on the right; a marked permanent engorgement of the external jugular veins existed, more especially on the right side. The superficial thoracic veins were also distended. His pulse was 88; his respirations were only 20; and his temperature was perfectly normal—namely, 98°. His pulse was irregular as to rate and volume, and occasionally intermittent. His heart was weak, irre-

action, and also intermittent, but free from any murmur. There was an extensive area of dulness posteriorly on the left side of the chest, and a considerable dulness also was discovered in front. Vocal fremitus was diminished on the same side. His respiration was largely diaphragmatic, and there was a great deal of dyspnoea. There was an almost complete absence of respiratory sounds of any kind on the left side of the chest. He passed that day comfortably, and slept fairly at night. About eight o'clock on the following morning he got a smothering, and could scarcely speak or breathe. Apnoea had set in. His extremities were cold half an hour afterwards, and there was evidently some serious pulmonary obstruction. On auscultation of the chest we now found that not only was the dulness intensified over the left lung, but there was also considerable dulness on percussion posteriorly over the right side of the chest. He was apparently dying. Dr. Foot suggested a hypodermic injection of one drachm of anhydrous ether. It was administered, and the result was remarkable. He rallied, and was able to take some punch, and said he felt comfortable. He remained tolerably well during the day, but still laboured under extreme dyspnoea, which rapidly increased again in the evening to almost complete apnoea. Half the quantity of ether was again injected at 6.30 p.m. At the moment of the injection he said, "God bless you—thank you," and for half an hour after that he felt better; but at a little after seven o'clock he fell asleep, and died perfectly quietly about eight o'clock. On *post mortem* examination, the moment the walls of the chest were opened, an enormous quantity of clear straw-coloured serum escaped from the left pleura. The pericardium was largely filled with similar serum. The left lung was collapsed; most of it was perfectly airless. The apex alone crepitated slightly; there was no marked pleuritis; there were only a few old adhesions. The right lung was the seat of a recent hypostatic congestion. A great deal of superficial fat was deposited on the heart, especially on its right side. The heart was large and flabby. The left ventricle was firmly contracted. The mitral and aortic valves were healthy; however, in the left anterior sinus of Valsalva there was an apparently old clot. The ascending aorta was throughout exceedingly dilated, and also in an advanced stage of atheromatous degeneration. When we reached its upper portion it became still more dilated into an enormous aneurismal sac, in which many large partly laminated old clots were found lying. This aneurismal dilatation engaged the entire of the transverse and the upper portion of the descending thoracic aorta. Throughout the aorta proved to be atheromatous. On slitting up the trachea from behind, we found its lower two inches hyperæmic, and the seat evidently of an acute tracheitis. The main bronchi were in the same condition. There was no apparent obstruction. A large dark spot on the anterior wall of the trachea, which was principally situated between two rings of the trachea, closely

coincided with a portion of the aneurismal wall, which was completely eroded. The walls of the aorta had completely disappeared in this situation, and the back part of the rings of the trachea were fully exposed. There is very little doubt that just in this situation very considerable pressure was exercised on the trachea, and also on the left bronchus. The sudden attack of dyspnoea is to be explained by increasing collapse of the left lung, and I take it that the effusion into the left pleura was simply a result of the vacuum formed—that it was a *hydrothorax à vacuo*. The venous turgescence no doubt extended into the intercostal veins, and facilitated the development of this exceedingly rapid pleuritic effusion.—May 6, 1876.

Enteric Fever.—DR. NIXON said: This specimen exhibits one of the rarest forms of pathological lesions met with in enteric fever. It was taken from a man, aged about thirty, who was admitted into the Mater Misericordiæ Hospital on the 23rd of March last. The history he gave us was that he had been in the Hardwicke Hospital, suffering from typhoid fever, and had been discharged. Probably he left the hospital of his own accord. He then remained at home for fourteen days, and suffered during that time from attacks of diarrhoea. When I saw him he was in hospital, apparently in an advanced stage of enteric fever. He had a dry brown tongue, which he was hardly able to protrude to the teeth, and great tenderness over the abdomen. He had also a very harsh dry skin, with a temperature of 104° , and a rapid pulse. During the time that he was under my observation the prominent feature of the case was diarrhoea of a most intractable character. The only medicine that controlled it in the least degree was sulphate of copper, with watery extract of opium. He continued in the condition I have described up to Good Friday last, when he got a severe pain in the left side, which was referred to the region of the spleen. This pain extended to the right hypochondrium. At this time he got a rigor, which lasted for an hour, his temperature remaining still at 104° . The rigor recurred once every second day. He complained greatly of pain in the abdomen, and universal tenderness over it. On the 1st of May he had an attack of hæmorrhage from the bowels, and on the 3rd of May he died. The diarrhoea was attributed to a cicatricial condition of the typhoid ulcers in the intestines, and the specimen shows a very good example of this condition. The ulcers had completely destroyed the muscular coats, reaching to the peritoneal surface. The spleen presented the appearance which you now observe. The entire of it seems converted into a large abscess, filled with brownish-yellow fluid. Very little remains of the true splenic pulp are to be seen. All the parts in the neighbourhood of the spleen are intimately connected with the thickened capsule, including the splenic flexure of the colon, the stomach, and the tail of the pancreas.

There was general peritonitis, but without very much serous exudation. All the intestines were more or less matted together, and coated over with lymph. The case illustrates one of the conditions of the spleen met with in typhoid fever—a condition which has been specially alluded to by Louis, Rokitansky, Hoffman, and Murchison.—*May 6, 1876.*

Narrowing of Aorta; Enlarged Bronchial Glands.—**DR. WALTER SMITH** said: This specimen was removed from the body of a boy, aged fourteen, who died in the Adelaide Hospital on the 24th of last month, and who had been under the observation of Dr. Head and myself at two periods for a considerable time. His case excited some interest, and led to some discussion as to the nature of it, and I may say at once that the appearances found on the *post mortem* examination did not tally with the expectations formed during life. The leading points of the case are borrowed from notes taken by Mr. Nelis. Up to the age of seven years the patient was a stout, fat boy. He then broke his leg, and was confined to bed for three months, and from that time he began to suffer from pain in the chest, which continued up to the date of his seeking for relief. He was admitted on the 8th of September, 1875, suffering from general anasarca of two weeks' standing, his face being very dusky and turgid. He never had rheumatic fever or scarlatina. Before his admission on one occasion he had hæmoptysis, and was admitted in a state of extreme dyspnœa, his breathing being laborious. Over the whole of the chest sibilant cooing râles were audible, and the base of each lung was dull on percussion. His neck was remarkably swollen, the cervical veins pulsated up to the ears, and the veins of his abdomen were distended. His fingers were clubbed. On the day of his admission there was a systolic apical murmur over the heart. The next day it was gone, but it reappeared on the third day, by which time, however, he was much improved under the measures which had been taken for his relief. At one period he used to scream very loudly, and at night he became distressed and excited. After the murmur had disappeared, it could be reproduced by the exertion of his going up one flight of stairs. At no time was there any basic murmur over the heart. He left the hospital in February of this year free from anasarca, and in fair health. He remained pretty well until the 18th of March, when he was suddenly seized with coronal headache, dyspnœa, and pain in his chest, and was readmitted. Before his admission he had several attacks of dark red epistaxis, his face and neck being turgid, and his lips livid. There were bronchial râles all over his chest. There was no œdema of the limbs. His urine was non-albuminous, and there was no cardiac murmur. His eyes were staring and prominent, and he laboured under intense dyspnœa, and became much worse in every way. Before his death the apical murmur of the heart reappeared. On the 24th he was moribund, and he died that night. The *post mortem*

examination was made fourteen hours after death. The surface of the body was livid. There was no fluid in the abdomen, nor anything abnormal, beyond a moderate degree of congestion of the liver, kidneys, and spleen. The lungs when recent were intensely congested, and presented abundant patches of pigment throughout their substance, and a few peripheral wedges of infarction. The appearance of the heart was not what might have been expected, considering that he had an intense and protracted death-struggle. The right cavities were not dilated, and no clots were entangled in their walls. The tricuspid orifice readily admitted the tips of three fingers, and nearly those of four. There was no pulmonic obstruction, nor were any of the valves in the least degree affected. The aortic valves were competent and normal, and the only point remarked about the aorta was that from the ventricle it barely admitted the passage of the fore-finger, while two inches above it gripped with tightness the little finger. The ductus arteriosus was closed, and there was no patency of the foramen ovale, nor was there any deficiency of the septum of the ventricles. The roots of the large vessels were matted together by connective tissue, and the bronchial glands were distinctly enlarged, one or two of them projecting into the superior vena cava, and narrowing the calibre of that vessel. Looking back on the case, it would seem that, with the very moderate amount of aortic narrowing which he had, the boy might have fared well for an indefinite length of time but for the advent of congestion of the lungs. The intermittent apical murmur which I have mentioned must probably be referred to the yielding of the wall of the left ventricle, under the additional pressure caused by temporary muscular exertion. The only pathological evidence to account for the dyspnoea and cyanosis, in addition to congestion of the lungs, is the pressure of the enlarged bronchial glands on the superior cava, and the moderate amount of aortic narrowing close to the ductus arteriosus. The amount of narrowing was such as could scarcely have been diagnosed during life, considering that a diagnosis of even much more extreme degrees of this affection has rarely been attempted.—*May 6, 1876.*

Enteric Fever and Scarlatina.—*DR. NIXON* said: This case presents some interest, as it illustrates the co-existing occurrence of scarlatina and typhoid fever. On the 17th of last April a girl, aged seventeen years, was admitted into the Mater Misericordiae Hospital. She had been sick for some days before her admission. She suffered from diarrhoea, and at the time I saw her she was feverish, had a white and moderately coated tongue, a dicrotic pulse, and some inflation of the abdomen. The diarrhoea, which was not very urgent, was of the usual typhoid character. I sent her from the ward below stairs to the fever ward, diagnosing the case to be one of mild enteric fever. Her temperature on the day

after she was admitted into the fever ward was 104° F. The diarrhoea continued, and also the same conditions of the tongue and pulse. From the general signs and symptoms present it seemed like one of those very mild cases of typhoid fever which have been described by the term "abortive typhoid." On the fifth day after her admission I noticed a scarlet rash on her skin, and in describing the case to the class, I mentioned that this was by no means an unusual occurrence in cases of typhoid fever, and that the characteristic rose spots were often ushered in by this peculiar rash. However, on the following day the first thing that struck me, on seeing the girl, was that she had severe coryza, and on questioning her, I found that she had a very sore throat. On examining the throat, I found that it was covered with a white patchy exudation. Her temperature, which on the previous day had been 102°, now rose to 104·5°; her pulse rose from 120 to 132; and her respirations were 28 per minute. I need not detain the Society with a description of the further symptoms of the case, which were those of malignant scarlatina. She had the usual scarlatinal bubo, which extended across the air-passage, and also the diphtheritic condition of the throat. The rash became very dark, and she died on the 23rd of April, the sixth day after her admission into the fever ward. The first thing I wish to call attention to is the condition of the throat. You can see the results of the diphtheritic ulceration, leaving merely traces of the tonsils. The spleen is greatly enlarged and softened. The intestinal lesion is shown by the general implication of the Peyerian patches, and the enlargement of the mesenteric glands. Tracing upwards from the ileo-cæcal valve, you can see the distinct enlargements of the solitary glands and patches of Peyer, and also their ulceration. I thought the case interesting, as illustrating the lesions peculiar to scarlatina and enteric fever, and as bearing on the observations of Dr. Harley as to the identity of the poisons of the two diseases.—*May 6, 1876.*

THE TOXIC PROPERTIES OF GLYCERINE.

MM. DUJARDIN-BEAUMETZ and AUDIGIÉ have in their investigations arrived at the following results:—1. Glycerine, chemically pure, causes a fatal result within twenty-four hours when introduced hypodermically into a dog in a dose of 10 grammes for each kilogramme of his weight—i.e., in the proportion of 1 per cent. 2. The symptoms of acute glycerism are within certain limits similar to those of acute alcoholism. 3. The anatomical lesions of glycerism being analogous to those of alcoholism leads to the inference that the toxic action of the two bodies is almost the same. 4. From a therapeutic point of view there is a danger in introducing excessive quantities of glycerine into the economy.—*Bull. Gén. de Thérapeutique.*

S. W.

CLINICAL RECORDS.

Notes of, and Remarks on, a Case of Dilated Hypertrophy of the Left Ventricle; Obstructive and Regurgitant Aortic Murmurs; Thickened, Contracted, and Inelastic Aorta (?); Peculiar Double Ventricular Systole. By JAMES BARR, M.B., L.R.C.S., Edin.; late House Surgeon, Northern Hospital, Liverpool.

H. B., aged forty-eight, butcher, married, admitted under the care of Dr. Davidson, December 17th, 1874, complaining of "shortness of breath and palpitation of the heart."

He has been employed as a butcher on ship-board since 1858, with the exception of a residence of four years in Australia, and eighteen months in the West Coast of South America. He does not seem to have ever been a teetotalter, and in the last mentioned place he scarcely kept within the lines of sobriety, as he acknowledges to have not unfrequently drunk "three pints of rum in a day" (which I think does not say much for the strength of the South American rum). He never had rheumatic fever, but says he had "rheumatism in the legs and shoulders five years ago." With this exception he was always quite healthy, until four and a half years ago, when he was laid up with "bronchitis and heart disease." Since then he has been occasionally fit for work up to last October, when the dyspnoea, palpitation, and cough became much worse.

Present condition.—He is obliged to sit up in the bed, as the recumbent posture causes him great distress. He is troubled with a harsh dry cough, but has no expectoration; his breathing is laboured; respirations 30; pulse 80, long and full, but collapses quickly between the beats.

Physical examination.—His chest is distinctly barrel-shaped, and the respiratory movements are defective; the upper zone heaving, while the lower and lateral portions are drawn in during inspiration. The usual signs of emphysema are pretty general, and especially marked in front. There is slight moist râle throughout both lungs, and dull percussion at the base of left.

The heart and liver are both considerably depressed by the emphysematous lungs; the percussion of the latter is about normal, while that of the former is increased to the left. The heart's apex beat is situated in the sixth interspace and an inch to the left of nipple, and is unusually prolonged. A diffuse heaving systolic impulse is also felt over the whole cardiac area and in the epigastrium.

In auscultation the sounds are dull, the heart's action seems laboured, and at the apex it presents somewhat the character of a double shock or stroke during systole. Double aortic murmur is well marked along the whole sternum, and both murmurs are heard distinctly at the apex—the ventricular systolic one being most intense—but neither of them is so loud as along the sternum.

His arteries are rather rigid, and the *arcus senilis* is very evident in both corneæ.

His urine was examined on many occasions and always found normal.

He was ordered rest in bed, a nourishing diet, and a mixture containing ammonia and ether, which was subsequently changed for an iron tonic.

He remained in the hospital till April 22nd, 1875, when he left, his general condition being greatly improved, but the cardiac phenomena were little if at all altered.

The subjoined tracings were taken on January 4th from his radial artery. The pressure of the sphygmographic spring was light in the first tracing, heavy in the last, and the others represent intermediate degrees of force, applied to the artery:—

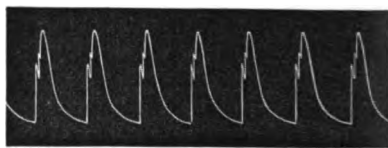
No. 1.



No. 2.



No. 3.



No. 4.



No. 5.



No. 6.



No. 7.



Remarks.—The pulse tracings in this case, I believe, are quite unique, as I have failed to find any at all resembling them on record. The downstroke is one uniform curve, and perfectly characteristic of considerable aortic regurgitation. But in the upstroke the peculiarities lie, and consist of two or three vibrations in place of the vertical percussion wave of an ordinary systole. Under light pressure as many as three waves are visible, but when the pressure is increased the finer undulation becomes gradually merged in the first. So that we have only two waves left. My interpretation of the tracings would be, that the first wave, which is very sudden and vertical, represents the ordinary percussion wave; the central undulation, which in the last tracings becomes part of the first, is equivalent to the tidal wave. The second, or rather tertiary wave, is the effect of the final shock or heave of the heart, which was perceptible to the ear in auscultation, and is not so powerful as the first, neither is it so sudden nor vertical, as the artery would be now comparatively full. As the tidal wave of the first stroke was lost under heavy pressure and the mechanical collapse of the spring, so the tidal wave of the second stroke is not perceptible, owing to the high pressure of a full artery and the rapid collapse from aortic regurgitation.

It would have been very interesting to have had the precise conditions which gave rise to this peculiar action of the heart revealed by a *post-mortem* examination, but this we are never likely to obtain, as after he left the hospital he was lost sight of, and most probably before this he has gone the way of all the earth. It was formerly held by some that dicrotism was the result of a double ventricular stroke, but I think such an opinion is now universally abandoned; however, if it still have any adherents, they have here got an undoubted case of breaking up of the rhythmical ventricular contraction into two parts, under at least one of the conditions which give rise to dicrotism, viz., low tension, but here the analogy ends. In this case the downstroke is one uniform curve, without any vibration whatever, and in every other respect the tracing is totally unlike that of dicrotism; further than this it is not necessary for me to disprove the above antiquated theory regarding the dicrotic pulse.

In this case, I believe, we had a contracted, thickened, and inelastic

aorta, which offered great resistance to the blood flow, and thus prolonged and doubled the ventricular systole; also on account of its unyielding nature, it acted the part of a rigid tube, and transmitted the cardiac waves undiminished to the periphery. If alcohol can produce chronic inflammatory changes in the aorta, it is only reasonable to suppose that they were present in this case.

In the "Proceedings of the Royal Society," May 27th, 1875, there is an interesting "Note on Reversed Tracings," by Dr. C. Handfield Jones. In these tracings the upstroke contains the vibrations; but, unlike ours, it is similar to the downstroke of an ordinary pulse-curve, and was synchronous with the diastole of the ventricles. The peculiarity in Dr. Jones' curves arose from the pressure of the brass plate, which crosses the artery in the Sanderson-Marey instrument; but, in the above case, the sphygmograph had not the brass plate in question.

TAPPING THE UTERUS (!).

DR. STICKNEY (*Bost. Med. and Surg. Jour.*, July 27) had been applied to several times by the same lady, during a period of five or six months, for relief from suppressed menstruation. Its arrest, the patient declared, was due to a cold bath which she indulged in just at the advent of a period, and she could not possibly assign any other reason. Cathartics, emmenagogues, &c., did no good. Not having seen or heard anything of his patient for nearly two months, the doctor had given her up, not expecting to hear from her again. Being summoned suddenly one night not long since to see her, he learned upon inquiry that she had been under the care of a surgeon who diagnosticated her disease to be a tumour requiring tapping as the only means of relief and cure. He had already tapped twice, the first time drawing off a quart of water, the second time a pint, and had engaged to tap the third time on the day after Dr. Stickney was called. Dr. Stickney soon found the lady who had been so long suffering from suppression of menses to be in labour, and when he, in answer to the interested and anxious inquiries of surrounding friends, announced his diagnosis, both patient and friends denied in concert the possibility of such a dilemma, and hastened to denounce the doctor's opinion and judgment at the same time. A living child was soon born, though the patient still persisted that the whole cause of the tumour was a mystery to her. The practical lesson to be drawn from this case—as its reporter, Dr. Stebbins, naively puts it—is, that a common trocar may be plunged into the uterus, the liquor amnii drawn off repeatedly, and no harm result save that of giving rise to premature delivery!

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

Of Eight Large Towns in Ireland, for Four Weeks ending Saturday, October 7, 1876.

| Towns | Population in 1871 | Births Registered | Deaths Registered | DEATHS FROM ZYMOTIC DISEASES | | | | | | | | Annual Rate of Mortality per 1,000 Inhabitants |
|--------------|--------------------------|----------------------|----------------------|------------------------------|---------|------------------|------------|-------------------|-------|-----------|------|---|
| | | | | Small-pox | Measles | Scarlet Fever | Diphtheria | Whooping Cough | Fever | Diarrhoea | | |
| Dublin, - | 314,666 | 668 | 527 | 1 | 6 | 7 | — | 7 | 26 | 51 | 21·8 | |
| Belfast, - | 182,082 | 513 | 311 | — | — | 6 | — | 8 | 16 | 26 | 22·3 | |
| Cork, - | 91,965 | 176 | 151 | — | 1 | — | 1 | — | 8 | 13 | 21·3 | |
| Limerick, - | 44,209 | 90 | 70 | — | — | 1 | — | — | 1 | 1 | 20·5 | |
| Derry, - | 30,884 | 52 | 27 | — | — | — | — | 1 | — | — | 11·0 | |
| Waterford, - | 30,626 | 63 | 48 | — | — | — | — | — | 2 | 6 | 20·3 | |
| Galway, - | 19,692 | 32 | 38 | — | — | — | — | — | 3 | 1 | 25·0 | |
| Sligo, - | 17,285 | 23 | 18 | — | — | — | — | — | — | — | 13·5 | |

Remarks.

Except in Galway, where it was rather high, the death-rate of the Irish towns was moderate or low. For Dublin the corrected death-rate was 21·3 per 1,000 of the population annually. In London it was 18·0, in Edinburgh 17·1, and in Glasgow 20·5 per 1,000 annually. Among zymotic affections, fever and diarrhoea were fatal in Dublin; fever, diarrhoea, and whooping-cough in Belfast; and fever in Cork and Galway. Of the 26 fever-deaths registered in Dublin, 6 were due to typhus, 19 to enteric, and 1 to simple continued fever. Of the 51 victims to diarrhoea, 38 were children under 5 years of age. A death was registered as caused by small-pox, but this was a mistake, which the Registrar-General explains in his Quarterly Report. The deceased died of phthisis, complicating morbus coxæ; four and a half years ago he suffered from small-pox at the South Dublin Union Workhouse, where he died on Sept. 30. His bed-card, with "convalescent after small-pox" upon it, *had remained up since 1872*, and the nurse who reported his death fell into the error of supposing it due to small-pox! In London a rather serious epidemic of small-pox prevails—53 deaths having been caused by it in the last four weeks, and 151 deaths since July 1 against 33 in the first half of this year

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.,
for the Month of September, 1876.*

| | | | |
|--|---|---|----------------|
| Mean Height of Barometer, | - | - | 29·792 inches. |
| Maximal Height of Barometer (on 20th at 9 a.m.), | | | 30·322 „ |
| Minimal Height of Barometer (on 4th at 9 p.m.), | | | 29·339 „ |
| Mean Dry-bulb Temperature, | - | - | 53·8° |
| Mean Wet-bulb Temperature, | - | - | 51·4° |
| Mean Dew-point Temperature, | - | - | 49·1° |
| Mean Humidity, | - | - | 84·2 per cent. |
| Highest Temperature in Shade (on 4th), | | | 66·4° |
| Lowest Temperature in Shade (on 15th), | | | 41·0° |
| Lowest Temperature on Grass (Radiation) (on 15th), | | | 34·7° |
| Mean Amount of Cloud, | - | - | 65 per cent. |
| Rainfall (on 17 days), | - | - | 3·146 inches. |
| General Direction of Wind, | - | - | N.W. |

Remarks.

This month contrasted remarkably with September, 1875, which was warm with beautiful weather from the 3rd to the 17th. Until the 15th areas of barometrical depression traversed Scandinavia and the northern parts of Scotland, some of them moving from E.S.E. to W.N.W. Gradients for N.W. winds accordingly prevailed in the British Islands, and the weather was cloudy and cold. A cyclonic system in the S.W. on the 15th was followed by the rapid formation of an area of high pressure (anticyclone) on the 19th, which ushered in three days of fine autumn weather. From the 24th to the close of the month a remarkable series of barometrical depressions travelled east-north-eastwards along the south coast of Ireland and across central England. These caused fresh to strong E. winds in Dublin, with frequent heavy rains. On the 30th a severe E. gale blew in the Irish sea, and led to a melancholy life-boat accident at Bray, Co. Wicklow. During the E. winds of these depressions, the higher clouds were almost constantly moving in an upper current from the westward.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

ON THE DIFFERENCE IN THE TENSION OF THE LEFT VENTRICLE AND THE AORTA.

SOME time ago Fick showed that the pressure of the blood was greater in the aorta than in the left ventricle, and explained this apparently paradoxical phenomenon by the supposition that the force of the systole is essentially employed, not in increasing the intracardiac pressure, but in giving an impetus to the blood, which, by virtue of the great rapidity thus acquired, was able to force open the semilunar valves against the higher pressure prevailing in the aorta. His experiments were made with a tube communicating with a manometer, and passed through the carotid into the ventricle. Whenever the tube was drawn out into the aorta the pressure rose, and when it was replaced in the ventricle the level of the curve sank. A second manometer connected with the crural artery showed constantly a higher pressure than that in the heart, and was uninfluenced by the drawing out of the aortic tube or its replacement in the ventricle. The above difference in pressure was found only when the heart acted quickly. If its beats were slowed, as by irritation of the vagus, the difference between the ventricle and the large arteries no longer appeared. Marey has lately called these results in question, and, maintaining the accuracy of his former observations, in which he found the pressure in the heart and aorta to be the same, attributes the difference found by Fick to a want of sensibility in his manometer, which was not able to follow the great and rapid fluctuations of pressure which exist in the interior of the ventricle of the pulsating heart. Dr. Gradle has examined this subject. He has repeated Fick's experiment, and has also taken the pressure in the ventricle by a manometer attached to a canula passed directly through the wall of the cavity, or to a bent tube passed through an opening in the left auricle, and so through the mitral orifice into the ventricular cavity, while a second manometer communicating with the carotid showed the arterial pressure. Having by these methods convinced himself of the accuracy of Fick's observation, Gradle constructed a model in which a caoutchouc bag and tube, provided with suitable valves, took the place of the ventricle and aorta respectively. Manometers connected with the different parts of this apparatus showed that when the tube (aorta) was closed at its free end the pressure in it rose with each successive compression of the bag (ventricle), and, as owing to the closure of the end of tube and the disposition of the valves

the fluid could not escape in the intervals of compression, the tension in the aorta soon came to stand much higher than that in the ventricle, where it remained during diastole the same as at the beginning of the experiment. But during systole the intra-ventricular pressure did not reach that in the aorta, although it sufficed to open the valves. Hence the ventricular manometer must register only a part of the work done by the ventricle. This is due not to a want of sensitiveness in the instrument (as is proved by a special experiment for which we must refer to the original work), but because the current passes by the opening of the manometer, and only a fraction of the velocity makes itself felt at an angle to the general direction of the stream. If the end of the aorta be not closed certain differences are observed. If the opening be very free, so that the fluid flows out of the tube as fast as it is pumped into it from the ventricle, then no difference of level can be obtained. But if the orifice be narrow, so that the quantity of fluid which flows from it between one systole and the next is less than that discharged from the ventricle at each systole, then a rise of pressure in the aorta occurs, which increases with each systole up to a certain point, when the efflux from the tube becomes equal to the influx from the ventricle, and a stationary condition is attained, the aortic curve standing at a higher level than that of the ventricle. By various modifications of the experiment it was shown that this difference varied directly:—First, with the amount of contraction of the ventricle; second, with the rapidity with which each contraction was effected, and inversely:—First, with the interval between one systole and the next; and, second, with the size of the opening at the free end of the aorta. Since, as has been shown, the difference of pressure depends on the cumulation of tension in the aorta by successive systoles, and as this is possible only if the valves at the mouth of the aorta are perfect, it must follow that if these valves be made ineffective the difference between the intra-cardiac and intra-arterial pressures must vanish. This was found to be the case in the model, and also in animals in whom the semilunar valves were torn through. In these cases the intra-cardiac pressure rose so as to equal, or nearly so, that in the carotid. One effect of diminishing the efflux-opening of the aorta in the model was further imitated in animals, in whom a contraction of the arterioles was caused by suspension of artificial respiration after section of vagi and curarisation. When, in this way, a narrowing of the blood paths was caused, a greatly increased difference of level in the two curves was observed. It was found furthermore that if the pressure in the aorta be high, as occurs when the small vessels are contracted, a considerable difference between the arterial and cardiac pressure is maintained, although the systoles follow each other slowly, the limitations as to rapidity of heart-beat found by Fick holding only in cases where the difference of level is originally very small. Since the results found by

the model are all reproduced in the living animal, and since it has been proved that in the former case they are not due to imperfections in the sensibility of the instrument, Gradle concludes that in the latter also the discovery of Fick cannot be explained by the inertia of the manometer as Marey has attempted to do. The explanation of Fick is the true one—namely, that the blood opens the valves against the higher aortic pressure by virtue of the great velocity imparted to it by the ventricular contraction.—*Wiener Medizinische Jahrbücher*. 1876. IV., 401.

J. M. P.

ADULTERATION OF WINES.

THE French scientific journals have lately been much occupied with accounts of a new and dangerous substance now extensively used in the south of France for the colouring of wines. The comparatively innocent colouring matters of vegetable origin, such as those from logwood, elderberries, &c., have been replaced by one of those remarkable colours now so extensively prepared from coal-tar—viz., *fuchsine* or *rosaniline*, a substance which possesses an immense tinctorial power, and which is as easy of employment as it is dangerous to the consumers of the wines so treated. The common method of obtaining fuchsine is by the action of arsenic acid on aniline, and when so prepared invariably contains a small quantity of arsenic; but even if pure, its action on the animal economy is of a very dangerous character. Ready-prepared liquids are sold to the trade under the various names of “caramel,” “old wine colour,” “new wine colour,” &c., all of which are more or less complex mixtures of alcohol, gelatine, glucose, fuchsine, and other substances. One cubic centimetre of these mixtures suffices to give a rich colour to many litres of diluted wine, and the cost is less than one shilling per pound. As some wine houses are known to consume £400 or £500 worth of these liquids yearly, some idea may be formed of the immense quantities of wine which are coloured by fuchsine. It appears that the legal authorities at Nancy were led to have a number of wines analysed, as severe illnesses had resulted from the use of them. The results showed that the colouring matter named was used on an enormous scale. Some wines were found to contain enough fuchsine to cause serious illness in very few days in the persons using them, and a proportion of 25 to 30 milligrams per litre was frequently met with. Experiments were made both on man and animals, and it was proved that the symptoms produced by fuchsine were precisely similar to those which had resulted from the use of the “doctored” wine. It was found to cause a most serious disease, albuminuria—the symptoms being, besides the presence of albumen in the urine, itchings of the mouth, colic, coloured urine and stools, and loss of weight. The symptoms were the same with dogs, whether the fuchsine was introduced by stomach or injected into the

blood, but in the latter case some of the dogs died at the end of ten or twelve days. The authorities at Nancy acted very vigorously in the matter, and seized all the "doctored" wines, so that at the present time merchants refuse to receive wines consigned to them from the south until an analysis has proved them free from fuchsine. In the event of them proving adulterated, they are seized by the legal authorities if the latter are duly informed, but cases have been known where the wines have been simply reconsigned to some other town where the authorities were less vigilant. Such are the principal points in the paper referred to, and although the adulteration named may not as yet have found its way into the class of wines prepared for exportation, it will be well for consumers of French wines in this country to be on the alert. Since writing the above lines, Dr. Bergeret, of the St. Étienne Hospital, has furnished a practical commentary on their theme, by communicating to the *Petit Lyonnais* the cases of a number of workmen in whom he has detected symptoms of poisoning produced by wine coloured with fuchsine.—*The Sanitary Record*, September 9, 1876.

PATHOLOGY OF CHOREA.

DR. G. S. STEVENS read a paper at a recent meeting of the New York Academy of Medicine, on chorea, which was of interest, inasmuch as it contained a theory of the etiology and pathology of the disease which has not hitherto been suggested. The proposition advanced by Dr. Stevens was, that chorea was due to errors of vision, principally hypermetropia, and he rested his argument in great part upon the fact that all of his observed cases had, either as a complication or a cause, the errors referred to. How far this peculiar view may be sustained in the future remains to be decided by other observers, inasmuch as an insufficient number of cases were reported. Dr. Stevens excluded from chorea proper all the epidemic and hysteric forms of the disease. Dr. Stevens further reported that a number of cases of chorea which came under his observation were cured by the use of such glasses as were indicated to correct the defect of vision. In the discussion on the paper, Dr. Noyes said that he was not prepared to accept or deny the views which had been advanced. The only way of coming to a conclusion on the matter was to examine the eyes of all chorea cases and to watch the effect of correcting the visual errors if any such were found. He remembered a case of chorea which had been examined for errors of refraction, but none were found. It was not the rule, however, for that disease to fall into the hands of ophthalmologists. Dr. Weir Mitchell had noticed that a number of cases of obstinate headache resulted from errors of vision, and were relieved by correcting them.—*N. Y. Med. Jour.*, Sept., 1876.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XV.—*On some New Tests for Bile Pigment.** By WALTER G. SMITH, M.D., Dubl.; F.K.Q.C.P.I.; Assistant Physician to the Adelaide Hospital.

THE three most important constituents of the bile are (1)—cholesterin, in small proportion; (2)—bile acids, in union with sodium, constituting about two-thirds of the biliary solids; and (3)—bile pigments, the chemistry of which is still incomplete.

The first of these—viz., cholesterin—is best recognised by its crystalline form, although it is true that several chemical tests for it have been proposed.

For the second—i.e., the bile acids (or, to speak strictly, for the cholic acid common to both the conjugate acids)—we have, when in an isolated or tolerably pure condition, a means of identification in Pettenkofer's well-known test. But the fallacies and difficulties that surround this test in its clinical relations are not sufficiently insisted on in oral teaching or in the text-books, nor is the fact so generally recognised as it should be, that Pettenkofer's test is quite valueless if applied directly to urine, a complex organic mixture, liable to important qualitative and quantitative changes, and that it offers reliable indications only with a pure solution of the biliary acids or their salts. In passing, I may remark

* Read before the Medical Society of the King and Queen's College of Physicians, Wednesday, November 1, 1876. [For the discussion on this paper see p. 495.]

that too much stress need not be laid on the detection of bile acids for clinical purposes; for according to the best observations, no one has found more than a few grains of bile acids excreted in the urine in twenty-four hours (W. Legg).

For the third ingredient—viz., the bile pigments, which, taken together with the mucus, constitute about one-fifth of the total amount of dry bile—the test usually relied on by chemists and physiologists is that known as Gmelin's *pigment reaction*, or the nitric acid test.

The best mode of employing this test is to pour a little colourless nitric acid (B.P.), diluted with three volumes of water, into a test-tube to the depth of half an inch, and then carefully float the urine on the acid (E. Reynolds). If bile pigment be present, the zone of liquid above the acid becomes first green, and then passes through various shades of violet or blue into red, and finally into yellow.

The nitric acid should not be too strong, otherwise the oxidising action is unduly vigorous, and the characteristic colour is not easily seen. A play of colours might arise from simple dilution of strong nitric acid containing much nitrous acid. Again, although writers on physiological chemistry usually, without giving any reason, follow Millon (*Comptes Rend.*, 14, 904) in recommending yellow nitric acid—i.e., containing some of the lower oxides of nitrogen—it is certain that pure colourless nitric acid is efficient, and Dr. E. Reynolds is of opinion that, applied as above, it is more delicate than the impure coloured acid.

In respect of this test it is important to remember that care should be taken not to infer the presence of bile pigment solely from the rapid and marked play of colours just mentioned, for nearly every urine will yield a reddish colour with nitric acid, and a deposit of red lithates in icteric urine may give a vivid change of colours with orange nitric acid, when the supernatant liquid afforded no colour reaction. Possibly the bile pigment was adherent to the lithates (Lewin).^a Again, high-coloured urines, rich in urea, may react similarly, and thus lead to mistakes in practice. It is further known that jaundiced urine will occasionally fail to respond to Gmelin's test, and Prussak (*Centralblatt*, 1867, No. 7), some years ago, attempted to discover the cause of this. None of the constituents of the urine have the power of influencing the reaction. It appears, however, that a febrile condition of the

^a Virohow and Hirsch's *Jahresbericht*. 1875. I., p. 226.

system, especially with continued high temperatures, sometimes exerts such an influence on the bile-colouring matter that it ceases to give its reactions with nitric acid (*Journ. of Anat. and Phys.*, 1868, p. 180).

The green colour is alone characteristic, and in its absence the presence of bile pigment cannot be considered as demonstrated. Moreover, the green colour is evanescent, and it is even said that urine which contains a large amount of indican will sometimes, although rarely, develop a green colour with nitric acid (Hoppe Seyler, W. Legg). Admitting that indican may give, with nitric acid, a green and yellow, or green and yellow with blue between, Lauder Brunton states that indican will never exhibit all the colours *in the right order*—surely an over-nice distinction (*Hand-book for the Physiological Laboratory*, p. 497). The presence of other reducing agents—*e.g.*, alcohol—is objectionable, because it may elicit “eine ähnliche Farbenscala in Ringen über einander . . . auch ohne Anwesenheit von Gallenfarbstoff” (Hoppe Seyler). In short, nitric acid is an energetic oxidiser, sometimes difficult to confine within due limits, and it affords colour reactions with a host of organic bodies.

The green colour, in the case of bilious urine, represents the first stage of the oxidation of the pigment—*viz.*, the conversion of bilirubin into biliverdin.

My object in writing the present paper is to invite attention to some other tests for bile pigment, which, from their simplicity and freedom from fallacy, seem to answer admirably to the requirements of practice.

More than seven years ago a sentence in a short article by M. Maréchal, *Sur l'Urine*, in the *Journ. de Pharm. et de Chimie*, Mars, 1869, attracted my notice. He there briefly states that tincture of iodine is a most sensitive test for bile in urine, giving with it a magnificent emerald green, which lasts for half an hour, and then passes through rose colour into yellow.

The following extract contains the whole of M. Maréchal's remarks upon this test:—

“Pour constater la présence de la bile dans l'urine, M. Maréchal a remarqué que les corps oxydants agissent tous de la même manière sur les urines bilieuses, et qu'il n'y a qu'à tenir compte de leur plus ou moins grande force d'oxydation. Trouvant ensuite que les teintes fournies par l'acide azotique, et dans lesquelles le vert et le violet dominant, étaient très-fugaces, il a cherché un

corps oxydant moins énergique que lui, et pouvant par conséquent lui donner des teintes plus stables, et par suite une plus grande certitude de la présence de la bile. Après bien des tâtonnements, et après avoir essayé l'eau iodée, l'iodure de potassium ioduré, il a eu recours à la teinture d'iode, réactif qui lui a paru plus sensible que les précédents. Deux ou trois gouttes de cette teinture versées dans une urine bilieuse, neutre ou acide, déterminent une teinte vert-émeraude magnifique qui persiste pendant une demi-heure, puis devient rose, enfin jaune. Si l'urine est alcaline, les premières gouttes ne produisent aucune teinte, attendu qu'elles sont employées à saturer l'alcali. Ce réactif est d'une grande sensibilité; M. Maréchal a pu obtenir la coloration verte en agissant sur 60 grammes d'eau distillée additionnée de quelques gouttes de l'urine d'un ictérique. Lorsqu'une urine contient très-peu de bile, il faut opérer en même temps sur de l'urine normale, et comparer les teintes. La différence sera plus évidente si l'on additionne ces urines d'eau albumineuse ou de sous-acétate de plomb; le précipité sera vert dans un cas et jaunâtre dans l'autre."

M. Maréchal's statements appear to have been overlooked or forgotten by subsequent writers, and I have not met with any allusion to his observations.

Since 1869 I have tried this test in almost every case of jaundice that came under my notice in the wards or dispensary of the Adelaide Hospital, and have repeated and varied the test many times in the one case. A few specimens of bilious urine, kindly furnished to me by other hospital physicians, have also been tested, and in no single case have I failed to get the distinctive colour reaction.

The best mode of procedure is to place about 3i. of the urine in a test-tube, and then to allow one or two drops of tinct. iodi (B.P.) to trickle down the side of the tube, held nearly horizontally, so that the two fluids may touch but not mix. If bile pigment be present, a fine green colour will almost immediately be developed below the red layer of iodine tincture. By holding the test-tube up against a white cloud, or against any white surface, in a good light, the three zones of colour will clearly appear—viz., the red iodine layer, and the yellow stratum of urine, separated by the green layer.

The test succeeds better by flotation in a test-tube than by allowing the tincture of iodine to run into contact with the urine on a white plate.

If the colour of the urine be very dark, it is better to dilute it with at least an equal volume of water before applying the test. Should the quantity of bile pigment be very small, it is advisable to make use of a specimen of healthy, non-bilious urine as a standard of comparison, treating it similarly with the iodine solution. Very small quantities of the pigment can be detected by shaking up a little of the urine with one-fourth its bulk of chloroform. Allow it to stand, decant the supernatant urine, filter the yellow chloroform stratum, evaporate to dryness, and test. With the iodine test I have succeeded in showing the presence of bile pigment in the yellow sputum of one case of jaundice. A simple solution of iodine in spirit will not answer, on account of the precipitation of free iodine on dilution, and the liquor iodi and linimentum iodi are unnecessarily strong. Even the tinct. iodi (B.P.) may be sometimes advantageously diluted with spirit. It is important not to *mix* the iodine solution with the urine, and not to add too much of the iodine. From neglect of these precautions I have known the test fail in the hands of others.

The green colour usually lasts for a considerable time, and may persist for days. Gradually it turns to a dusky brown, but even then the green can sometimes be restored by the cautious addition of iodine. Heat changes the green speedily to brown, and previous boiling of the urine prevents the development of the colour. Nothing characteristic was observed when the green fluid was examined by the spectroscope. The *cause* of the coloration evidently lies in a limited oxidation, the bilirubin, as in Gmelin's test, being probably converted into biliverdin, with this difference, that other tints—red, blue, or yellow—are not evoked by the feeblér oxidising power of the iodine.

With the object of examining the delicacy of the test, and of studying the effects of other oxidants, some further experiments were made; and my best thanks are due to Dr. Emerson Reynolds for the free use of the Laboratory, Trinity College, Dublin, as well as for several suggestions in the carrying out of experiments.

A sample of very dark-coloured bilious urine was diluted with four volumes of distilled water, and subjected to the following tests:—

Tincture of iodine brought out a bright green colour, while the same urine, similarly diluted, gave, with nitric acid, in Dr. Reynolds' hands, a pink colour, and but little or no tinge of green. The same urine, kept over until the day following, reacted similarly.

Freshly-made solution of bromine caused turbidity, and a scarcely perceptible greenish tint. Liquor chlori yielded a pale olive green. Five c. c. of urine from the same patient were diluted with five volumes of water, and afforded, with the tincture of iodine, a bright green; with nitric acid, a paler green, succeeded by zones of colour.

The same urine was submitted to the action of three other oxidising agents—viz., peroxide of hydrogen, chlorate of potassium, and nitrite of potassium.

To the diluted urine a little dilute sulphuric acid was added, and a few drops of commercial solution of peroxide of hydrogen. No colour was developed until a gentle heat was applied, when a pale green colour appeared, which was destroyed by boiling or by excess of the peroxide.

A few grains of potassic chlorate, dissolved in warm water and acidified with sulphuric acid, were added to the diluted urine. On heating the mixture a green colour was produced, similar to that caused by peroxide of hydrogen.

Nitrite of potassium and acetic acid added to the urine in the cold brought out a greenish yellow colour, destroyed by heat.

Dr. Reynolds then suggested a trial of another less known oxidising agent—viz., a solution prepared by digesting peroxide of lead (or, red lead) in glacial acetic acid, and allowing the sediment to subside. The solution probably contains an oxy-acetate of lead.

The following experiments were made with a small quantity of turbid, high-coloured urine, removed after death from the bladder of an old woman who died with ascites and intense jaundice due to complete occlusion of the bile-ducts. The urine was previously diluted with eight volumes of water.

(a) *Tincture of iodine* developed a permanent bright green; (b) *nitric acid*, green and red zones, the green colour rapidly vanishing; (c) *peroxide of hydrogen* and *acetic acid* gave a faint green in the cold; gently warming the fluid deepened the colour to a fine green, which was retained on cooling. (d) Some of the urine was added to a few drops of the *acetic solution of peroxide of lead*; a rich, clear green was immediately developed without the aid of heat, and remained persistent.

Solutions of lead peroxide in strong phosphoric acid (B.P. acid concentrated to one-fourth), and in glacial acetic acid *plus* five per cent. of sulphuric acid, were also prepared; and on another occasion some of the yellow peritoneal fluid from the same subject was tested with these solutions. The sulpho-acetic lead solution did

not answer so well, but the phosphoric solution produced immediately a fine, permanent green colour, and rendered the turbid fluid perfectly clear, no doubt by dissolving any albumenoid matters. Healthy urine gave no colour whatever with these solutions. *Ferric chloride* was also tried on the same fluid, and immediately developed a distinct green. The facility wherewith ferric salts are reduced is an obvious objection to this test.

All these results point to the conclusion that the green test is not a mere chromatic change, but is a true oxidation effect.

But it is not sufficient to show that iodine and various oxidants act as colour tests for bile; it is also necessary to demonstrate that no other pigment in urine, except bile, will give like results.

With this object I have taken every occasion of testing other specimens of high-coloured urines, non-bilious; and on this point especially—the crucial check of the value of the tests—I would be glad to learn the experience of others who have larger opportunities than myself.

Up to the present I have not been able to meet with a single source of fallacy in the use of the iodine test. Thus, in the deeply-coloured urines of continued fever, of acute pneumonia, of cirrhosis of the liver, of Addison's disease (for which latter opportunity I am indebted to Dr. Duffey), and in yellow vomit, I have uniformly obtained negative results. Bloody urine offers no difficulty, and the presence of albumen does not interfere with the test.

I have not yet had time or means to check the effects of the other tests described above, but, judging from analogy, there is no reason to anticipate any discrepancy.

Briefly to sum up the results of the foregoing observations, it would appear that the value and delicacy of the nitric acid test are less than is commonly supposed, although it is depended upon in delicate physiological investigations, and that it is desirable to have at command some supplementary tests for biliary pigment which shall be easy of execution and free from fallacy.

Four test-liquids seem to answer to these indications—viz., tincture of iodine, ferric chloride, peroxide of hydrogen, and the acetic or phosphoric solution of peroxide of lead. The two latter liquids possess over the former the advantage of being themselves colourless, whereby any change of colour produced in testing is more readily appreciated; and the phospho-plumbic solution especially promises well as a delicate reagent.

Peroxide of lead has been utilised in experiments on bile (Maly),

but peroxide of hydrogen, and ferric chloride have not, to my knowledge, been used by other experimenters, and I venture to hope that physiologists and clinical observers will test their limits of usefulness.*

With a fresh supply of material I purpose to study more closely the action of the iron, lead, and hydrogen peroxide tests; but, as the clinical experiments have been chiefly conducted with the iodine test, I will, in conclusion, mention the reasons which seem to me to recommend tincture of iodine to the notice of those interested in such matters.

1. A single reagent, always easy to obtain, is alone necessary.
2. The test-liquid is not corrosive.
3. A single definite colour is produced with the bile pigment.
4. The colour is sufficiently persistent.
5. From the less powerful chemical energy of the reagent, as compared with that of nitric acid, there is a diminished liability to error.
6. No other pigment than bile will yield the characteristic green colour. And lastly,
7. The test fully equals in delicacy, possibly surpasses, the nitric acid test.^b

ART. XVI.—*A Case of Syphilitic Phthisis. By STEPHEN M. MACSWINEY, M.D., Physician to Jervis-street Hospital.**

P. B., aged thirty-six, a tailor by trade, and of intemperate habits, was admitted into hospital, July 11, 1876, and discharged therefrom, at his own request, July 29, same year.

History.—He had been originally of a very robust and healthy constitution, and had inherited no tendency to delicacy on either father or mother's side; he had never suffered as a youth from any ill-health; on the contrary, he had always been remarkably strong and active; he had been a militiaman for ten years; he married when eighteen years old; never had had venereal disease previous to his marriage. Three healthy children were born in due course, two of whom are now alive, and in good health; the

* An account of recent investigations on the bile pigments will be found in Watts' Dictionary of Chemistry. Second Supplement, 1875.

^b It should be borne in mind that all the experiments refer to *human* bile pigment.

* Read before the Medical Society of the King and Queen's College of Physicians, Wednesday, November 1, 1876. For the discussion on this paper see page 497].

third died of measles. Four years after marriage he contracted a chancre, and infected his wife. Seven children were born to him after this event, not one of whom survived for any length of time; two of them were stillborn and putrid, whilst the other five died at short periods after birth, perishing from well-marked syphilitic cachexia. In a short time after this attack of primary disease, P. B. suffered from constitutional syphilis; he got sore throat, and had a rash over his body. Subsequently he complained much of pains in his bones, and from having been an extremely healthy man in appearance, he had now become very pale and delicate-looking. In other respects, however, he was tolerably well, and a long interval of freedom from severe symptoms succeeded. The constitutional disease appeared to be in abeyance until about two years ago, when unmistakable manifestations of tertiary syphilitic intoxication presented themselves. He was attacked with severe ear-ache, which caused him great agony; to this succeeded a profuse offensive, purulent discharge from the meatus auditorius. Ultimately the *ossicula* were recognised in the matter which flowed from the ear. About this time, too, he became the subject of that distressing and destructive disease, *ozæna syphilitica*; first there was a nasal discharge, which was purulent, with blood intermixed; next the septum of the nose was perforated, and extensive necrosis was produced; finally considerable changes in the contour of the nose were effected; the ridge of that organ sank, whilst the tip was flattened and much distorted. Contemporaneously with this destructive action the sense of smell had become, I was told, almost destroyed. My informant, intimately acquainted with this man's history, further assured me that at this time and ever since, the expirations through the nose carried with them an intensely offensive odour, which tainted the surrounding atmosphere. The breath, indeed, it was said, was so intolerable that no one would consent to abide in the same apartment with him, and he was obliged to occupy a room separate from his former fellow-workmen and from his family. He continued thus for some time ailing and losing strength, until about six months ago, when he got, for the first time, a distressing cough, which was accompanied by pain in the chest, but at no period complicated with hæmoptysis. He now lost flesh rapidly; other symptoms of wretched and fast-failing health succeeded, and at last, well nigh worn out, he sought admission to hospital.

His condition on admission was miserable in the extreme; he

was faint, pulseless, quite unable to stand; he laboured under great dyspnoea, and gasped for breath on making the least exertion; his face was in some parts waxy pale (the pallor of *syphilitic anæmia*); in other parts it was livid and swollen; his abdomen was considerably enlarged by dropsical effusion; he had general anasarca, and his legs were shining white, and greatly œdematous; he coughed frequently, and with much distress, bringing up an expectoration which was rather scanty, semi-purulent, and muddy-coloured. He could only rest in bed in one position—namely, semi-erect, and inclined to the right side; his hair was dry and tow-like, and sparsely scattered over his head, which was in parts quite bald; his face presented the syphilitic physiognomy in a manner which the nasal deformity and discharge rendered but too well pronounced; his chest, pretty universally over its surface anteriorly, responded to percussion with less than the normal amount of sonority. There was, moreover, absolute dulness in the middle space of the left thoracic parietes anteriorly. Posteriorly no noteworthy result followed the application of the physical method of examination.

Auscultation revealed very general moist rhonchi; whilst in the left chest, in the part corresponding to the marked dulness, there were unmistakable evidences of softened and broken up lung-tissue, together with small pulmonary excavations. No abnormal cardiac phenomena were presented to notice. Hepatic dulness on percussion was denoted over a very extensive area, and the liver could be felt notwithstanding the ascites—hard, irregular, and distinctly nodulated far below the margin of the ribs, and across into the epigastrium. The abdomen was swollen, and there was well-marked fluctuation in the contents of the peritoneal sac. His urine was high coloured, small in amount and densely albuminous.

I pass over, as not of primary importance, the details of this man's treatment whilst in hospital. With regard to it, it will suffice to say that it was at first, necessarily, directed to the object of warding off death. As soon, however, as he had somewhat regained a little strength, I put him on anti-syphilitic remedies—viz., perchloride of mercury and bark; and I can truly say that his improvement whilst taking these drugs, during the three weeks he was in hospital, was to me something quite marvellous. It was, however, but a temporary rally; the vital organs were too seriously implicated to admit of a continuing and permanent improvement. I learned that he relapsed soon after going out of hospital, and

only survived for about six weeks. I may here say, once for all, that his prominent symptoms and complaints whilst in hospital and subsequently, until his death, were those of ordinary well marked pulmonary phthisis. His body was not examined after death. It will have been noticed that this patient had a chancre fourteen years ago, which was followed by "secondaries," and I think it is very apparent that the whole case presents a good example of the ravages which may be inflicted by this destructive disease, syphilis, when once the constitution has been attacked.

I have termed this a case of syphilitic phthisis, deeming that the history and course of the affection point distinctly in that direction; but I am quite alive at the same time to the fact that a grave, albeit unavoidable, defect exists in the report of the case. There was not—there could not have been—a *post mortem* examination of the body made; and, indeed, I feel that an apology is due by me to the Society for bringing the paper forward at all, under the circumstances. But although no autopsy was made, and that consequently I am not able to produce any morbid specimens, showing anatomical lesions, going to confirm the opinion which I formed, I yet feel convinced that this was an example of what the older physicians called "phthisis a lue venerea," and what is now known as "syphilitic phthisis." This conclusion—arrived at, it may perhaps be objected, upon insufficient grounds—was founded, mainly, upon the following considerations:—

1st. The history of the case.

2nd. The absence of any hereditary predisposition to ordinary phthisis.

3rd. The progressive extension of the syphilitic disease from its outset, through its various stages, to its ultimate full development.

4th. The special cachexia by which the symptoms were accompanied, together with the combination of the lung affection with other specific morbid phenomena.

5th. The stage of the specific disease—viz., the *tertiary*—at which the pulmonary attack set in, that being the stage most frequently by far reported as the one in which syphilitic phthisis had been found to present its first manifestation.

This diagnosis was subsequently in some degree confirmed by the good effect of the short course of anti-syphilitic treatment.

Pathologists now universally recognise the existence of syphilitic affections of the internal organs of the body. And those organs, such as the larynx and trachea, which are so intimately related to

the lungs, have been found to be particularly subject to the syphilitic contamination. The laryngoscope has revealed many forms of the manifestations of syphilis in the larynx and surrounding textures. These morbid conditions include condylomata, various kinds of ulcers, affections of the perichondrium, and many other lesions. And it would appear, from many observations, that the non-occurrence of syphilitic disease of the larynx shortly after the onset of the primary syphilitic symptoms, affords no security whatsoever that the patient shall not ultimately suffer from specific laryngeal affections which, in numerous instances, have made their appearance after a prolonged period of incubation—and often to exposure to cold, or other irritation of the larynx is ascribed, by the patient, the origin of laryngeal symptoms which in reality were due to a former remote syphilis. The very considerable number of persons attacked in this way is shown by the investigations of Gerhard and Roth, who found that out of fifty-six syphilitic patients eighteen were affected by disease of the larynx (*"Virchow's Archiv.,"* Vol. XXI., p. 7). And Ricord always maintained that the proportion of cases of syphilitic laryngeal disease is greater among those who have tertiary than among those who have only had secondary symptoms. But, whilst there are frequent descriptions of this and other affections closely related to syphilis—*e.g.*, syphilitic iritis, syphilitic peritonitis, syphilitic neuritis, syphilitic osteitis, placental syphilis, &c.—it is noteworthy that detailed accounts of serious lung lesions, due to the action of this virus, are remarkably rare. Nevertheless, I venture to lay this down as an established proposition—that the syphilitic virus, in common with many other conditions which tend to induce poverty of the blood, and thus to cause pulmonary consumption, is capable, when the necessary concurrent conditions are present, by poisoning the blood and thus impairing nutrition, of producing destructive disease of the lungs. And, furthermore, I submit that these syphilitic lesions of the lungs would appear to be more common than is at all generally recognised; the error of regarding them as of rare occurrence being due to their having oftentimes been quite overlooked or mistaken.

That there are various forms of consumption of the lungs, due to the various forms of inflammation with which these organs are liable to be attacked, and by which the variety in type and modifications in morbid conditions so commonly noticed are produced, will not now, I presume, be denied. But to distinguish the several

types of the disease from each other, and to separate for clinical recognition the different forms, may well be declared to be a work of difficulty, and one which has not yet been by any means fully accomplished. Prominent amongst these various forms, alike rarely described and difficult of identification, stands syphilitic phthisis. Graves ("Clinical Lectures," Neligan's edition, pp. 463, 464) recognises a "pulmonary irritation connected with a venereal taint in the system;" and he discusses at considerable length the question—to which he attaches great importance—of pulmonary complications in syphilis. And Stokes ("Diseases of the Chest," p. 94) says—referring to Graves' views on the relation between syphilis and the pulmonary tissues—"he entertains a firm conviction that the syphilitic poison may affect the pulmonary as well as the osseous, cutaneous, or mucous tissues—a point of doctrine which I look upon to be completely established." Wilks ("Trans. Path. Soc. Lond.," Vol. IX., p. 55) exhibited specimens of diseased organs, amongst them portions of a lung, supposed to be due to syphilis. He concludes "that the pulmonary affection in syphilis is a disease *sui generis*." Dr. Herman Lebert, of Breslau, has discussed the question, "What relation exists between tuberculosis and syphilis" in two lectures (*Med. Times and Gaz.*, Nov. 20, 27, 1869), and has finally laid down this principle as certain, "that syphilitic infection is not only able to develop an existing predisposition to tubercle, but that it can cause tuberculosis without any such disposition. Tuberculosis must consequently be classed as one of those diseases which may be caused by syphilis." This point, then, of the direct influence of syphilis in the causation of consumption being, I may assume, fully established, the question naturally arises in the next place—are there any pathological conditions in the diseased lung which serve to characterise syphilitic phthisis so constantly as to afford a means whereby the affection may be recognised with certainty either during life or after death? Many contributions towards supplying an answer to this question are to be found in the medical literature of recent years. I shall now merely advert to two or three such authorities.

Dittrich (Niemeyer, Vol. II., p. 693, second American edition) has long since recognised white-coloured, nodular, firmly-resisting indurations—"gummous pneumonia"—in the lungs, due to syphilitic disease. These indurations were sometimes stained black by deposit of pigment, and enclosed dry, cheesy accumulations.

Lancereaux describes a syphilitic lobular cirrhosis of the lungs,

with large granules—"cirrhose à gros grains"—usually met with in the tertiary stage—a stage which Lancereaux defines as "the period of gummy deposits." Fournier (*Gazette Hebdomadaire de Médecine et de Chirurgie*, Nov. and Dec., 1875) recognises two forms of syphilitic lesions of the lungs—viz., (1) simple hyperplasia, and (2) gummata. These two forms may exist in connexion in the same lung. He points out that gummata in the lung differ from tubercle in *situation*, being limited to one lung; in *number*, being few and solitary; in *size*, being larger than tubercle; and in *colour*, being either white or yellow, and never semi-transparent. And he maintains that syphilitic phthisis has three varieties—viz., (1) a latent form, producing no symptoms, and therefore unrecognised during life; (2) a limited form, with but slight disturbance of breathing, and some—but not much—cough and expectoration, the general health remaining good; and (3) a pronounced form, with abundant physical signs, and severe symptoms, the same as in ordinary decline.

Many of the reported cases were not recognised during life, their syphilitic nature having only been demonstrated by the appearances accidentally discovered in the lungs upon the occasion of making a *post mortem* examination. In the case I relate the process has been reversed. I have deduced the syphilitic origin of the pulmonary and other lesions from the life-history of the patient, and from an observation of the symptoms which he presented—unverified, however, by an autopsy. The opinion I formed was that the starting-point of the patient's ill-health dated from the period when he got a chancre; that he was shortly afterwards attacked with secondary symptoms, denoting the entrance of the poison into the system; that to this there succeeded, as is the more usual course, a prolonged period of quiescence; and that, finally, renewed activity of the virus was aroused, the bones of the ear and nose, as well as the internal organs—the liver, kidneys, and lungs—were in turn invaded by tertiary deposits, and that the pulmonary disease was the immediate cause of death. The urine contained albumen in abundance, and the kidneys were doubtless lardaceous; for we know, on the authority of Lancereaux, that the presence of syphilitic disease of the kidneys often produces albuminuria.

The liver, I have stated, could be felt hard and nodulated, and it, too, was, as I believe, densely infected with syphilitic deposit. Wilks ("Guy's Hosp. Reps.," IX., p. 19) says, speaking of the liver—"This organ is that which appears to be pre-eminently

selected as the seat of the syphilitic formations;" and in the illustrative cases which he there relates he tells us "the liver presented generally a number of rounded nodules."

Syphilitic lesions of the lung form so insidiously, and the symptoms and physical signs are for a long time so obscure, it is often not possible to diagnose their distinct existence; and at present, even under the most favourable circumstances, their diagnosis remains still very difficult. It may be laid down, perhaps, as a rule of practice, that when in any particular instance it comes to be suspected, from the history and symptoms, that syphilis may be the cause of lung disease, the indication is to at once apply the test of specific medication; for it having been abundantly demonstrated that tertiary syphilis can produce in the lungs lesions which simulate pulmonary consumption, and many of these lesions being, as is now well known, quite amenable to specific remedies, their recognition and treatment by iodide of potassium and mercury become, it is evident, matter of the highest practical importance in clinical medicine.

ART. XVII.—*Description of an Improved Spray Apparatus.*

By B. WILLS RICHARDSON, Fellow and Examiner, Royal College of Surgeons; and Surgeon to the Adelaide Hospital.

IN the practice of antiseptic surgery I have frequently experienced the want of an efficient apparatus for pulverising carbolic and other antiseptic solutions, the ordinary appliance composed of the caoutchouc bags and either a metal or glass pulveriser, being very liable to become occluded.

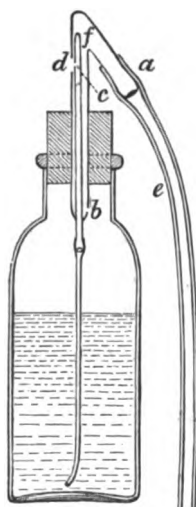
The ingeniously constructed steam pulverisers also, when made of the size essential for the production of a sufficiently large volume of spray for a surgical operation, impart too much heat to the surgeon during the operation, are anything but agreeable, and are, moreover, unsuited for ether spray congelation. They, likewise, are liable to "break down," and are rather costly for general use. The latter objection equally applies to the brass force-pump used by some surgeons for spray purposes.

The chief desiderata in a spray apparatus are—(1) the capability of producing a large and thoroughly pulverised volume of spray; (2) facility of being worked without causing fatigue and apprehension of failure during an operation; and (3) economy both as regards original cost and subsequent wear and tear.

In 1875 I suggested to Messrs. Yeates and Son that Fletcher's bellows or blower might with advantage be substituted for the caoutchouc bags to work the spray-tubes now so extensively used. By doubling the caoutchouc so as to increase the power of this blower, and carefully adjusting the spray-tube, they succeeded in producing an arrangement which gave a fair spray with but little labour. Since that time, however, they have constructed a spray-tube for me which gives a much more ample volume of spray with very little blast, and which is nearly quite free from risk of derangement.

Fig. 1 represents a sectional view of this spray-tube with bottle and stopper.

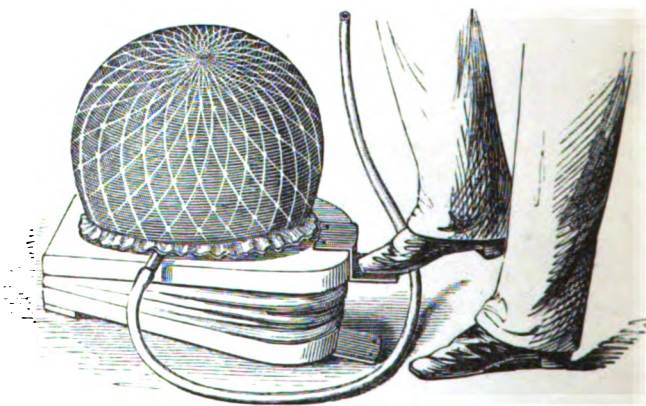
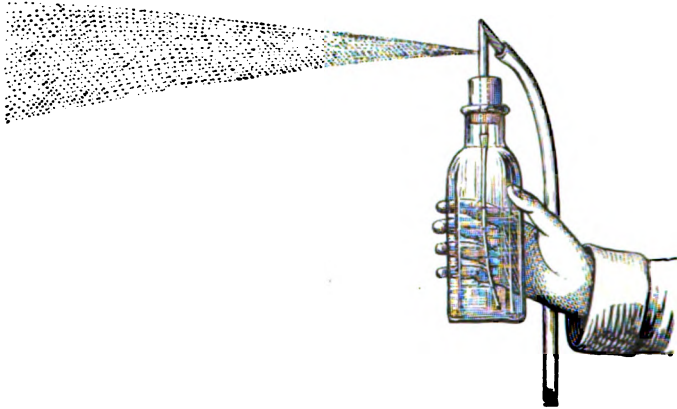
Fig. 1.



- a. Connexion of the caoutchouc blow-tube with the spray-tube.
- b. Aperture in spray-tube for escape of the air into bottle.
- c. Aperture at which the escaping fluid is pulverised.
- d. Aperture for scattering the pulverised fluid.
- e. Caoutchouc blow-tube, which forms the communication between the bellows and spray-tube.
- f. Metal spray-tube, which may be either bronzed or silvered.

In the ordinary perfume spray-tubes the vacuum produced by the blast of air rushing across the upright tube raises the fluid. When thus raised, it is broken into spray by contact with the blast. In Dr. B. Ward Richardson's (London) ether spray apparatus the power of the blower is exerted in forcing the ether up to the nozzle which scatters it. By combining both these arrangements a perfectly pulverised spray of great volume is produced which extends from the outlet orifice *c*, Fig. 1., to a distance of from six to ten feet, and having a width when expanded of about two. Thus, of the blast which enters at *a*, Fig. 1, part passes down to the aperture *b*, escapes into the bottle, and, by the pressure which

Fig. 2.



it exerts on the surface of the fluid in the bottle, forces this up the inner tube to the orifice *c*, where it is pulverised and scattered by that portion of the blast rushing out at *d*.

By prolonging the inner tube downwards within the bottle, by means of fine caoutchouc tubing, the spray-tube can be used with a full-sized bottle for tedious operations.

For scenting a room, a short piece of caoutchouc tubing is substituted at *a* for the long blow-tube *e*, and the apparatus is blown with the mouth. The bottle for this purpose, it is needless to say, should be small.

It is essential that the cork and the metal spray-tube should fit tightly, the cork in the bottle and the tube in the cork. A vulcanised caoutchouc stopper, however, is preferable to a cork.

Whatever sized bottle is used the caoutchouc tube within it should reach nearly to the bottom.

Fig. 2 represents the apparatus complete, with the exception of a break in the blow-tube for convenience of printing.

Fletcher's blower, which gives a pressure of 10 ozs. to the square inch, will work the spray-tube; but I use, in the Adelaide Hospital, a larger-sized one, with the pressure raised to 20 ozs., and obtain a proportionably fuller and finer spray than the other would give.

Fletcher's blower is well known in the chemical laboratory, in connexion with gas furnaces and blow-pipes. It is worked with the foot, and is a wedge bellows (Fig. 2), which has two openings guarded by valves, one in the upper and the other in the under board. Both valves open upwards. A strong internal spring keeps the bellows open when not pressed by the foot. To the upper board the circumferential portion of a disc of stout sheet caoutchouc is securely fastened with wire. The air enters at the lower valve, is forced through the opening by the pressure of the foot, and distends the caoutchouc, the over-distension and bursting of which is prevented by a net. The elasticity of the caoutchouc urges the air through an exit pipe and along a flexible tube to the jet-producing tube; and as a second stroke of the foot forces more air into the caoutchouc bag, before the expulsion of the whole of the first charge, a constant stream is produced.

For working the new spray-tube (Fig. 1), if the caoutchouc be too thick, the bellows of the size I recommend will not be sufficiently powerful to distend it into the bag form, so indispensable for the production of a continuous spray. I mention this lest

when the caoutchouc requires renewal too thick a piece should be substituted for it.

For blowing the laboratory fire, Fletcher's bellows surpasses, in power, the ordinary bellows, and will revive the dulllest fire with extraordinary rapidity. To use it for this purpose, a piece of iron tubing about eighteen inches in length may be substituted for the spray-tube and bottle.

COXALGIA.

PROF. LEWIS B. SAYRE draws the following conclusions as regards the etiology and treatment of this disease:—1. That morbus coxarius is a disease peculiar to early childhood, or the age of reckless indifference. 2. That it is almost always of traumatic origin, and not necessarily connected with vitiated constitution. 3. That *rest* and freedom from pressure of the parts involved, while at the same time the rest of the body is allowed free exercise in the open air, and a nutritious diet, is the best treatment that has yet been devised for this disease. 4. That if this plan of treatment is adopted in the early stages of this disease, the majority of cases will recover with nearly, if not quite, perfect motion and without deformity. 5. That in the advanced *second* stage of the disease, when absorption cannot be produced, it is better to puncture or aspirate the joint and remove its contents than to leave it to rupture by ulceration. 6. That in the third stage of the disease, when the treatment recommended in this paper has been properly applied without satisfactory improvement, but progressive caries continues, then *exsection* of the diseased bones is not only justifiable but absolutely necessary. 7. That the operation of exsection of the hip is easily performed and attended with no danger. 8. That after exsection of the hip-joint in cases of caries the recovery is much more rapid and certain, and infinitely more perfect as to form, motion, and the usefulness of the joint and limb, than when left to the slow progress of nature's exfoliation.—*Proceedings of International Medical Congress.*

SNUFF FOR CATARRH.

As the use of topical remedies to the Schneiderian membrane has been greatly revived since Dr. Ferrier's paper upon the subject, Dr. Neall, writing to *The Med. Times and Gaz.* (Sept. 22), reminds his readers of a very simple and pleasant snuff many years since recommended by Dr. Brown-Séquard—viz., finely powdered white sugar. This application is efficacious not only in ordinary catarrh, but also, he states, in that unpleasant form produced by iodide of potassium.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Principal Health-resorts of Europe and Africa for the Treatment of Chronic Diseases. By THOMAS MORE MADDEN, M.D., M.R.I.A.; Vice-Président of the Dublin Obstetrical Society; lately Examiner in Obstetric Medicine in the Queen's University in Ireland; Physician to St. Joseph's Hospital for Sick Children; ex-Assistant Physician to the Rotunda Lying-in Hospital, &c. London: J. & A. Churchill, New Burlington-street. 1876. Pp. 276.

THE work before us consists of two essentially distinct parts—the first treats of change of climate as a means of cure, and gives an account of the various health-resorts of Southern Europe and Africa; and the second is devoted to the subject of mineral and thermal waters in the treatment of chronic disease, and to an account of the various spas of Europe. If we recollect how bulky are many of the most esteemed treatises on each of these separate subjects, we shall be prepared for extreme condensation in a volume which disposes both of winter health-resorts and of spas in two hundred and seventy pages. Dr. Madden's descriptions of the various localities to which British invalids resort during winter and spring are exceedingly brief; but we can vouch, from personal knowledge of the most important of those he describes, that his account is accurate, and, in our opinion, his estimate of their advantages and disadvantages fair and just. Though he does not limit himself to an examination of these localities as health-resorts for consumptive patients, it is naturally with regard to their suitability for such invalids that he especially discusses them. In his introductory chapter he incidentally alludes to Western Australia and to the Cape of Good Hope as regions where the phthisical sufferer may hope to find not only restored health, but, when his health is restored, a fairly remunerative field for his exertions. The climate of the former he specially, and we believe with justice, praises, though it is the least prosperous and socially the least desirable of the Australian colonies. Of the Cape he does not speak in equally

favourable terms, but says that the uplands of the adjoining colony of Natal appear to offer peculiar climatic advantages to phthisical immigrants. In Dr. Madden's work "On Change of Climate," published many years ago, he accorded high praise to Malaga, and he still considers it one of the best winter-resorts in Europe for consumptive patients requiring a warm, dry, tonic climate—and, doubtless, he is right, though the poorness of the meat and the badness of the drainage constitute serious drawbacks for British invalids. His opinion of two of the most celebrated wintering places, Madeira and Pau, may be gathered from the following extracts. Of the former, he says:—

"The cases in which a winter visit to Madeira might prove serviceable are—in dry chronic bronchitis and winter cough, with great irritability of the mucous membrane of the air passages and little expectoration; chronic laryngeal irritation, and cases of spasmodic asthma of the same character; and also, with more caution, in a limited number of cases of phthisis in its earliest stage, and marked by similar symptoms. But to the majority of consumptive patients, especially if the disease be advanced beyond the first stage, the humid, warm, and relaxing atmosphere of Madeira would, I believe, be prejudicial."

And of Pau, he writes:—

"From the foregoing account of this climate and its effects I draw the conclusion, that the varied temperature of Pau renders that town unsuited for the winter residence of consumptive patients, in whom the disease has progressed to its second or third stage. It would be a bad abode in most cases of chronic bronchitis, and, according to the testimony of an eminent resident physician, peculiarly unsuitable in cases of fatty degeneration and certain other chronic diseases of the heart.

"On the other hand, this climate may occasionally act beneficially in some cases of incipient phthisis, when a pure mountain air is required; and perhaps also in some instances of that disease in its first stage. But even in such cases I think that a more bracing and more equable climate is generally required.

"With regard to asthmatic patients I must, however, modify what I said in my first work on this subject, as further experience has convinced me that in many cases of spasmodic asthma, Pau agrees better than any other climate."

Of Cairo, Dr. Madden speaks in much more favourable terms:—

"To that large class of patients in whom incipient phthisis is insidiously progressing to its fatal issue, in young persons of phlegmatic temperament, about the age of puberty, the climate of Middle Egypt offers a

resource only second in value to a long sea voyage. Cairo would also generally be a good winter resort in cases of humoral asthma, in some instances of the disease so well described by Dr. Dobell under the name of 'winter cough,' chronic laryngeal affections, and in some cases of chronic bronchitis, and characterised by relaxation and debility. But Cairo should be particularly shunned by those who are suffering from pulmonary disease, accompanied by a hard dry cough, a tendency to congestion of the lungs, and, above all, by those disposed to hæmoptysis.

"When consumption has advanced to the second stage, there are very few cases in which the climate of Cairo, or that of any part of Egypt, would be advisable; and when the disease has reached its third and last phase, I would add, it is generally most unsuitable, although I have more than once seen consumptive patients, who were almost moribund, sent out to winter, or rather to die, on the Nile."

The last of these sentences we would adopt with considerable reservation, as we believe that it is just in cases in which phthisical change has reached the second or even the third stage, but is strictly confined to a single lobe—and, although productive of comparatively copious expectoration, is unaccompanied by active inflammatory change or fever—that such a climate as that of Cairo is beneficial; indeed, there is nothing about the clinical history of consumption better established than the fact that the *stage* to which the disease has advanced is of much less importance as a guide to prognosis, and as an indication for treatment by change of air than the *extent* of lung involved and the amount of constitutional irritation. The existence of a cavity of considerable size in one apex, provided other portions of the lung are unaffected, justifies a much more hopeful prognosis than extensive solidification, even though softening has not occurred.

With regard to another point, Dr. Madden, through misapprehension we think, places himself in opposition to what we believe to be sound doctrine. Niemeyer, who, to our thinking, has done more than any modern writer to portray truly the clinical history of phthisis, says that if we have come to the conclusion that a consumptive patient has tubercle, we ought not to send him to Nice, Cairo, &c., but let him live his last days amongst his own friends and die in his own house; with such an opinion our author says he differs entirely. We do not think he does; we believe he has failed to master Niemeyer's views, and does not know the sense in which that eminent physician, and most pathologists of the present day, use the term tubercle. We are pretty certain that he would not

advise a patient who was tuberculous, in Niemeyer's sense, to leave his own home; certainly if he would he would commit a great mistake.

With the exception of Western Australia, the highlands of Natal, Malaga, and Egypt, the health-resorts described by Dr. Madden are not portrayed in inviting colours, and the account he gives of most of them certainly leaves on the reader's mind the impression that he thinks of most of them what he says of Malta, that it is suited rather for slightly ailing valetudinarians, imaginary invalids, some cases of chronic rheumatism, scrofula, hypochondriasis, and dyspepsia, than for those who suffer from pulmonary consumption.

The second part of the work consists of introductory chapters on the nature and remedial effects of mineral and thermal waters, on dyspepsia and the spas, on gout and its treatment by mineral waters, and on mineral waters in the treatment of some of the diseases peculiar to women. On this last subject the author, who has particularly devoted himself to gynæcological medicine, may claim a special right to speak with authority, and we do not venture to criticise his opinions. How far his obstetric brethren coincide in his view that the most frequent causes of uterine complaints are gout and scrofula, we do not know; but we hope they will lay to heart the practice which on this theory he advocates:—

“With regard to active local treatment in ordinary cases of chronic inflammation and simple ulceration of the os and cervix uteri, Talleyrand's advice might be advantageously adopted by gynæcologists—‘*Sur-tout point de zèle.*’ If we trusted more to constitutional remedies, and above all to the judicious employment of certain mineral waters, in such cases, I verily believe that in many instances our patients would get well sooner than they do, when the local irritation is increased *secundum artem* by frequent examinations and the repeated application of escharotics.”

Dr. Madden's work has the great advantage of being written by one who has personal knowledge of nearly every place he describes, and has a special interest in none of them; and we believe that in it the practitioner will find a succinct, just, and practically useful guide to the health-resorts and spas of Europe.

Statistics, Medical and Anthropological, of the Provost-Marshall-General's Bureau. Compiled under direction of the Secretary of War. By J. H. BAXTER, A.M., M.D.; Colonel, and Chief Medical Purveyor, United States Army. In Two Volumes. Washington: Government Printing Office. 1875. Quarto.

THIS massive work is another example of the enlightened spirit and liberality with which Congress has provided for the compilation and publication of the vast amount of statistical matter accumulated during the American war of 1861–66.

We have recently noticed "The Medical and Surgical History of the War of the Rebellion;"* and it now becomes our privilege to direct our readers' attention to this equally valuable work. We use the word "privilege" advisedly, for we write under a full sense of the compliment paid us by our American *confrères* in presenting us with these national publications.

The first volume is a large quarto of 656 pages, with 60 charts and 11 plates or maps. An introductory section acquaints us with the plan and scope of the work, and the statistics tabulated and discussed in it are derived from records of the examination for military service in the armies of the United States, during the late Civil War, of over a million recruits, drafted men, substitutes, and enrolled men. But of this vast number of records only a little over one-half have been used, owing to incompleteness in the remainder. The omissions, in the opinion of the Chief Medical Purveyor, Dr. Baxter—and we agree with him—abridged the work rather than detracted from its value.

The examinations, the records of which form the groundwork of these statistics, were conducted in the following manner:—

"A large room, having abundance of light, was chosen as the examining-room, upon entering which the recruit was required to divest himself of all his clothing; and as this was done in the presence of the examining surgeon, any defect, as a stiff joint, &c., which the volunteer or substitute would wish to conceal, would often be detected, especially as he would be thrown off his guard, not supposing the examination had commenced. Similarly, a feigned defect could be detected. Having divested himself of his clothing, he was asked his name, age, nativity, and occupation, and questioned in regard to his general health and that of his family, whether any hereditary taints

* Dublin Journal of Medical Science. November, 1876. P. 400.

existed, and if he had ever suffered from any disease or accident, thus endeavouring to obtain all the information possible concerning him, his conversation at the same time enabling the surgeon to judge of his mental as well as of his physical qualifications. He was then placed under the sliding-bar of a stationary measuring-rod, directed to stand erect while his height was accurately measured and noted, and a tape-measure was passed around the chest, over the inferior angles of the scapulæ, and directly over the nipples, and an accurate measurement taken both at inspiration and at expiration. After this the colour of the eyes and hair, and the complexion were noted, and a general inspection of the whole body made, notice being taken of the muscular development and general appearance; and at the same time tumours, ulcers, varicose veins, chronic swellings of the extremities, or any visible defect that would disqualify him for service, were carefully sought for. The head was then examined for any depressions or irregularities that might exist, and the eyes, eyelids, nose, ears, teeth, palate, and fauces were attentively noticed. The chest was then inspected, and the respiration, action of the heart, and condition of the lungs ascertained by auscultation and percussion. He was next directed to stand erect, place his heels together, and raise his hands vertically above his head, the backs together, in which position he was required to cough and make other expulsive movements, while the abdomen, the inguinal rings, and the scrotum were examined for hernia. The penis was then examined for epispadia, hypospadia, and venereal disease; the groin for glandular enlargements; and the testicles for atrophy, induration, and other diseases. He was then required to bend forward, the fingers touching the floor, the legs straight, and the feet widely separated, in which position the fissure between the nates was inspected for hæmorrhoids, fistula, prolapsus ani, or any other disease of the anus, and firm pressure was made along the whole length of the spine, at short intervals, to discover if any tenderness indicative of disease existed. Next he was required to extend his arms laterally, at right angles to the body, and then bring them together on as nearly the same level as possible both in front and behind; to pronate and supinate them rapidly; to strike out from the shoulder; to flex the arm upon the shoulder, and the forearm upon the arm; and to open and close the fingers rapidly. He was then required to walk rapidly, and to run around the room several times; to hop, first on one foot and then on the other; with his heels together, to raise himself upon his toes; to flex and extend the thigh, leg, and foot; to kick first with one foot and then with the other, and to make several leaps in the air. While thus excited, he was again examined for lung and heart diseases, and also for hernia. The eye-sight was next tested by placing him at one end of the room, the surgeon standing at the other, and asking him the number and colour of objects displayed to each eye separately. The hearing was also tested at the same time by modulating

the tones of the voice while conversing with him, and by covering one ear while endeavouring to discover defects of the other. The remaining portion of the record was then made out, the result of the examination recorded, and, in case of rejection, the disease or infirmity on account of which he was found unfit for military service was written in full."

After the introductory remarks, the compiler proceeds to give a comparative view of the instructions issued by the United States Government and by the principal Governments of Europe for the guidance of the medical officer in the examination of recruits. This information will be particularly useful to all members of our own Army Medical Service, as it embraces the facts relating to recruiting in France, Great Britain, Switzerland, the North-German Empire, Austria, and the United States.

Next in order we have an outline of the "History of Anthropometry,"* or the attempts to ascertain the proportions of the human body. Justice is fully done to the labours of M. Quetelet in this branch of science. The conclusions arrived at up to the present time are summarised as follows:—

"1. There is a perfect form or type of man, and the tendency of the race is to attain this type [l'Homme moyen, of Quetelet].

"2. The order of growth is regular toward this type.

"3. The variations from this type follow a definite law, the law of accidental causes.

"4. The line formed by these variations, when arranged in groups, receding on either side of their mean, is the curve well known to mathematicians as the binomial; it was first applied by Newton and Pascal to questions of astronomy and physics, but it is applicable to all the qualities of man which can be represented by numbers.

"5. The more numerous the data obtained by actual measurement, supposing them to be made with reasonable care and without bias, the more nearly accurate is the mean result, and the more closely does it correspond with that obtained by calculation."

The section concludes with a complete bibliography of anthropometry. The remainder of Volume I. is divided into three parts: the first contains a review of the tables which compose the entire of Volume II., another quarto of 797 pages; the second is composed of charts and maps; and the third contains reports of the surgeons attached to the Boards of Enrollment, with other docu-

* "Si je hasarde ici le nom d'Anthropométrie, c'est uniquement pour éviter les longueurs et la répétition trop fréquente de la circonlocution 'Théorie des proportions du corps humain.'"—Ad. Quetelet. *Anthropométrie*, page 78. Bruxelles. 1870.

ments. A copious general index is found at the close of Volume I.

Meagre as this notice of such a work almost necessarily is, we trust enough has been said to show that at all events no public library in the United Kingdom should be without a copy of this—one of the most elaborate contributions to the science of statistics, to State Medicine, and to military literature, which has ever been published.

Chemia Coartata; or, the Key to Modern Chemistry. By A. H. KOLLMYER, A.M., M.D.; Professor of Materia Medica and Therapeutics at the University of Bishop's College, &c. London: J. & A. Churchill. 1876.

In these days it is not easy to introduce a novelty in the structure of a book. But Dr. Kollmyer has succeeded in doing this, and in conveying to his readers a vast amount of information in clear language, and within a comparatively small compass. The novelty in the structure of his book consists in its tabular form. Thus, parallel to the heading "Oxygen," we find columns giving the synonyms, history, sources, equations, properties, and tests of that substance; and so of all the chemical bodies described in the work. In the words of the preface, it will be found especially adapted to the wants of (1) students intending to present themselves for examinations; (2) persons who have learned the *old* notation and wish to become acquainted with the *modern system*; (3) those who desire to keep themselves posted on this subject, and who can thus easily refresh their memories without doing so at the expense of their other engagements.

The author defines chemistry as "that branch of the natural sciences which searches out the nature and properties of all bodies entering into the composition of the universe. It investigates the action between the integrant molecules or atoms of bodies, and studies the force or power by virtue of which every combination is effected." In the first five pages a condensed but accurate explanation of the chief terms used in modern organic chemistry is given. "Molecule," "atom," "quantivalence," and so on, are defined, the sixty-four elementary bodies are enumerated, and the principles of chemical combination are stated.

The book may be regarded as consisting of four parts. In the

first, the non-metallic elements and their more important compounds are tabulated. Hydrogen is the type of the monatomic non-metallic elements; oxygen, the type of the diatomic; nitrogen, that of the triatomic; and carbon, that of the tetratomic elements. Part II. treats of the "chemistry of the metals," which are again arranged in classes, according to their quantivalence—as monads, dyads, triads, tetrads, pentads, and hexads. Here, also, we find definitions of the important terms relating to this part of the subject.

Part III. is devoted to "organic chemistry," or "the chemistry of the carbon compounds." In some introductory remarks Dr. Kollmyer shows that the distinction formerly drawn between organic and inorganic chemistry is now fast disappearing. This portion of the book deals with monatomic alcohols and some of their principal derivatives, polyatomic alcohols and their derivatives, and organic compounds containing nitrogen.

Part IV. gives, in a tabular form, a synopsis of poisons with their antidotes and general treatment; and a very fair index concludes this handy volume, which we heartily commend to all classes of our readers.

Weather Charts and Storm Warnings. By ROBERT H. SCOTT, M.A., F.R.S.; Director of the Meteorological Office. London: Henry S. King. 1876. 8vo, pp. 158.

FROM the earliest times the relations existing between medicine and meteorology have been most intimate. The far-seeing Fathers of Medicine were not slow to perceive how sensitive to the changes of the weather the delicate human organism is, and what an important bearing the study of weather-phenomena should exercise on the practice of medicine. More than two thousand years ago Hippocrates wrote—"Whoever wishes to study the healing art properly must do this—first, he must attentively consider the seasons of the year," &c.* In his other writings, also, he often recurs to this subject, as these quotations will show:—

(a) "The changes of the seasons are a fertile source of maladies, and in the seasons themselves great variations of cold and heat, and other things proportionally."

* Πέρι 'Αέρων, Ὕδατων, Τόπων.—"Ἱητρικὴν δοτὶς βούλεται ὁρθῶς ζητεῖν, ἰάδε χρὴ ποιεῖν. πρῶτον μὲν ἐνθυμέσθαι τὰς ὥρας τοῦ ἔτους, κ.τ.λ."

(β) "Some constitutions fare well or ill in summer, others in winter."

(γ) "Different diseases prevail at different seasons, or again subside."

Now mark the hurtful character of sudden changes of the weather:—

(δ) "In any season of the year, should heat prevail at one time, and cold at another of the same day, we may anticipate autumnal maladies."

Again, while writing on "Regimen," he says:—

(ε) "Those persons (of men) are more liable to sickness in winter than in summer, and in spring than in autumn."^a

Celsus, in his second book, *De Medicina*, says—"Saluberrimum Ver est: proxime deinde ab hoc, Hiems, periculosior Æstas, Autumnus longe periculosissimus"—a statement which to this day is true to the letter as regards Southern Italy, where the words were penned. What can be more graphic than his description of the effects of a north wind, or, as we may say, of a "nor'-easter"—"Aquila tussim movet, fauces exasperat, ventrem adstringit, urinam supprimit, horrores excitat, item dolores lateris et pectoris, sanum tamen corpus spissat, et mobilius atque expeditius reddit!"

There is reason to believe that the suggestions thrown out by these illustrious Greek and Latin physicians were allowed to remain almost a dead letter. Certain it is that their doctrines as to the close relation of meteorology and of climatology to medicine became dimmed by the rust of time, and were neglected or forgotten.

Within comparatively recent years, however, a keen interest has been awakened in the subject. Every medical man who enters her Majesty's service is required to study the broad facts relating to meteorological observation, and afterwards is called upon to aid in building up a science of climatology. Men like Parkes and Ballard in England, Stark and Arthur Mitchell in Scotland,

^a (α.) Αἱ μεταβολαὶ τῶν ὥρέων μάλιστα τίκτοισι νοσήματα. καὶ ἐν τῇσιν ἔρπον αὐτοῖσι μεγάλαι μεταλλαγαὶ ἢ ψύχους ἢ θαλπίος, καὶ τ' ἄλλα κατὰ λόγον οὕτως.—"Aphorismi," sect. iii.

(β.) Τῶν φύσεων αἱ μὲν πρὸς θέρος· αἱ δὲ πρὸς χειμῶνα, εὐ καὶ κικῶς πεφύκασι.—Ibid.

(γ.) Τῶν νόσεων ἄλλαι πρὸς ἄλλας εὐ καὶ κικῶς πεφύκασι.—Ibid.

(δ.) Ἐν τῇσιν ὥρῃσιν, ὅταν τῆς αὐτῆς ἡμέρης, ὅτε μὲν θαλπὸς ὅτε δὲ ψύχος γινῆται, φθινοπωρινὰ τὰ νοσήματα προσδέχεσθαι χρή.—Ibid.

(ε.) Ταῦτα τὰ σώματα ἐν τῷ χειμῶνι, νοσεράτερα ἢ ἐν τῷ θερεί· καὶ ἐν τῷ ἔρπι, ἢ ἐν τῷ φθινοπώρῳ.—Περὶ Διαιτήσεως, Book i.

Quetelet in Belgium, Pettenkofer and Buhl in Germany, have studied the weather, and published researches on it and upon its bearing upon health. And now meteorology—than which no science is more closely analogous to that of medicine—takes its proper place, not only in the special curriculum for the *Diploma in State Medicine*, but even in the ordinary curriculum for the Degrees in Medicine, of the University of Dublin.

This being so, any standard work on meteorology should have a special attraction for the members of our profession, and the treatise we are now privileged to review fully deserves the epithet just used. The author, Mr. Robert H. Scott, F.R.S., is a distinguished graduate in Arts of the University of Dublin, the talented translator of Dove's work, "The Law of Storms," and the able Director of the Meteorological Office, London—a department controlled by a committee of the Royal Society.

For nearly ten years, in the capacity of director, Mr. Scott has carried on and developed the telegraphic system of weather observation which (so far as regards the United Kingdom) was organised by the late Admiral Fitzroy in the year 1861. This system now exists in almost every country of Europe, and is carried to great perfection in the United States of America.

What it has done towards founding a "weather knowledge," as distinguished from the science of meteorology itself, Mr. Scott tells us in his book on "Weather Charts and Storm Warnings."

The volume consists of eight chapters and four appendices. Chapter I. informs us of the materials available for weather study, and describes the observations taken at the telegraphic stations in communication with the meteorological office. These observations refer to atmospherical pressure, temperature, humidity, wind, rain, weather, and sea disturbance (at coast stations). The reporting stations now number 51—4 in Sweden, 3 in Norway, 2 in Denmark, 1 in North Germany, 1 in Holland, 29 in the United Kingdom and adjacent islands, 1 in Belgium, 9 in France, and 1 in Spain.

Chapter II. introduces us to Buys Ballot's law of the direction of the wind, which is given (as applicable to the Northern Hemisphere) in these words—"Stand with your back to the wind, and the barometer will be lower on your left hand than on your right." The etiology of the great atmospherical currents is explained, and certain technical terms (as "veering," "backing," &c.) are defined.

In Chapter III. a full account of the indications of the barometer is given. Two charts illustrate this chapter—one, by means of

isobars (or *lines passing through those places where the barometrical pressure is equal* at a given time), shows what is meant by the term "anticyclone;" the other, in a similar manner, what a "cyclone" or "cyclonic system" signifies. As we have seen, the *direction* of the wind is determined by differences in atmospherical pressure, which are marked by differences in the height of the barometer. So far we have nothing to guide us as to the *force* of the wind. In Chapter IV., however, this is shown to be chiefly regulated by the amount of the differences in the height of the barometer, or by what are called "*barometrical gradients*." The gradients adopted by the meteorological office are expressed in hundredths of an inch of mercury per one degree of sixty nautical miles. A simple example will make the explanation of these terms more easy. Galway is, as the crow flies, about 120 miles west of Dublin. Now, if the barometer, at a fixed hour, be two-tenths of an inch lower at Galway than it is in Dublin, we should have a gradient of $\cdot 10$ inch between Dublin and Galway for *southerly* winds. Such a gradient would cause a fresh gale from S. in Ireland. Similarly, were the barometer two-tenths of an inch higher at Galway than in Dublin at the same time, there would be a gradient of $\cdot 10$ inch for *northerly* winds, and a fresh N. gale would blow in Ireland.

Chapter V. applies these facts to the interesting subject of "cyclones" and "anticyclones;" and this is again followed by a clear exposition of what is known as to the motion of storms and the agencies which appear to affect it (Chapter VI.). Chapter VII. tells of the use of weather charts, and Chapter VIII. deals with storm warnings. When we reflect that most of the areas of barometrical depression, or cyclones, which pass over the British Isles travel from the westward, and so preclude the possibility of gaining very early information as to their approach until they have almost reached our Western Coasts, the fact that the meteorological office is able to maintain a general success of nearly 80 per cent. for its warnings is exceedingly creditable.

If this hasty sketch of a pleasantly written, clear, and most interesting treatise on what we may term "Practical Meteorology" should draw the attention of our readers to the book, we shall not have taken up our pen in vain. Those who puzzle over the "daily weather charts" in club-rooms, libraries, and the columns of newspapers, will here find the solution of the puzzle, and we are much mistaken if they do not, in future, take a keener and more intelligent interest in "The Weather."

J. W. M.

Medicinal Plants. By ROBERT BENTLEY, F.L.S., and HENRY TRIMEN, M.B., F.L.S. London: J. & A. Churchill. 1876. Parts VII.—X.

THE issue of this useful serial is being steadily continued, and as yet no intimation has been given of how many parts it will consist. One great advantage of the plates is, that they purport to be of the natural size, and, in future numbers, we would suggest that the names beneath the plates should always correspond with those heading the accompanying letterpress. Some of the figures are capitally executed, and are life-like, while others look like the spectres of the flowers. It is a pity that such havoc is again played with the botanical names, and is it necessary that so many changes from those specified in the B. P., 1867, should be made? The bibliographical references are valuable, and are carefully given.

Atlas of Skin Diseases. New Sydenham Society. Fasciculus XV.

THE plates in this fasciculus are fully equal in artistic merit to their predecessors, and represent cases of rarity and interest.

In Plate XLII. we have a good illustration of *Lupus erythematosus*, occurring on the face and hands. It is scarcely so life-like as the drawing of the same disease in Dr. Duhring's *Atlas*, Part I.

Plate XLIII. illustrates that singular affection styled *Morphœa*, or Addison's keloid, but perhaps better known by its synonym, *Scleroderma*; and Plate XLIV. presents the features of a severe ulcerating eruption (*hydroa*), to which Mr. Hutchinson has drawn attention, as occasionally arising under the use of bromide of potassium.

The Student's Guide to Dental Anatomy and Surgery. By HENRY SEWELL, M.R.C.S., L.D.S., &c. Pp. 198. London: J. & A. Churchill, New Burlington-street. 1876.

MR. HENRY SEWELL, in carrying out the wishes of the projectors of the "Student's Guide" Manuals, has had placed before him, in his undertaking, difficulties of no ordinary nature. It is designed "that these manuals should be free from needless technicalities, that they should facilitate the labours of the student, and

that, whilst each volume—although presenting merely an outline of the subject—should be complete in itself, it should, at the same time, lead the reader to desire, and direct him in seeking, the fuller knowledge afforded by more extended treatises. As might be expected under such trying conditions, the greater portion of this book is made up of references to and quotations from the works and papers of Waldeyer, Le Gros and Magitot, Wedl, John Tomes, C. S. Tomes, J. A. Salter, Heath, Mason, Cattlin, and the author; but we hardly think one of the conditions laid down in the preface has been carried out to its fullest extent—viz., freedom from needless technicalities. This little book, nevertheless, contains a great deal of both useful and valuable information, which might, in our opinion, have been made much more *interesting* to the student, if the painstaking author had kindly remembered that everyone who might read the “Student’s Guide to Dental Surgery” was not so well grounded in this important branch of surgery as himself, and that a student’s manual can be made both learned and simple without an excess of labour.

We thank the author, however, for the earnestness with which he has endeavoured to discharge his trust, and we hope his little volume will prove useful to many, whether it is their intention to practise dental surgery or not. Dental caries and its treatment is well considered in two chapters, and the space devoted to this most interesting and important branch of dental practice takes up, as it ought to do, a considerable portion of the book. Directions for the preparation of teeth for filling with the various materials employed are given with clearness and precision, showing that the author is well able not only to preach but to practise.

CURIOUS INCOMPATIBILITY.

CHLORATE of potassium and iodide of potassium are both entirely harmless in suitable doses. Furthermore, these two salts do not react upon each other in solution, even at a boiling heat. Yet it has been proved that when they are administered together they do combine in the stomach, producing iodate of potassium, which is poisonous. M. Melsens (*Amer. Jour. Phar.*, June, 1876) found that dogs could take the chlorate or iodide in doses of five or seven grains with impunity, but that a mixture of the two killed them in a few days, with the symptoms of poisoning by iodate of potassium. This combination must therefore be avoided. Indeed, as a general rule, the chlorate is so unstable, and so ready to give up its oxygen, that it cannot safely be combined with any substance capable of oxidation.—*Chemist and Druggist*.

PART III.

HALF-YEARLY REPORTS.

REPORT ON SURGERY.

By WM. THOMSON, A.B., M.D.; Fellow and Member of the Surgical Court of Examiners, Royal College of Surgeons, Ireland; Surgeon to the Richmond Hospital.

SUCCESSFUL LIGATION OF THE INNOMINATE, COMMON CAROTID, VERTEBRAL, AND INTERNAL MAMMARY ARTERIES.

THE operation of ligaturing the innominate artery has been tried several times, but has been attended with almost uniformly fatal results. The one exception is the case of Dr. A. W. Smyth, of New Orleans, who, in 1864, tied the innominate in a mulatto for the cure of subclavian aneurism, the patient living for about ten years subsequently. The full details of the proceedings are now published, and it will be interesting to make a brief abstract of them.

The aneurism was situated in the posterior inferior triangle of the neck, and was about the size of a small orange. The innominate was tied a quarter of an inch below its bifurcation, and the common carotid above its origin. In 48 hours slight pulsation returned at the wrist. The ligature from the carotid came away on the 13th day, and on the 14th there was hæmorrhage, which only ceased with syncope. The wound was filled with No. 9 shot, covered with some lint, and a small paper-weight was placed on this to increase the pressure. On the 17th day the ligature on the innominate separated, and on the 18th day after this a terrific hæmorrhage took place, but ceased, as did the first, with syncope. Believing that the vertebral artery, by its proximity to the ligature, was preventing the occlusion of the larger vessel, Smyth determined to tie it. This was done four days later (July 9, 1864), the ligature being applied to the artery just before it enters the foramen in the transverse process of the sixth cervical vertebra, through an incision made along the outer edge of the sterno-

mastoid muscle. There was no return of bleeding, and the patient left hospital on 15th September, four months after the operation. Five years afterwards he was exhibited at a meeting of the American Medical Association, and not a trace of the aneurism remained—only the scars were to be seen; and the members were of opinion that the operation had never been done at all.

In 1874 the patient, Banks, wrote to Dr. Smyth that the tumour had returned, and, on his coming to hospital, it was found that the aneurism had recurred, and had attained a size considerably larger than at the time of the original operation. Believing that a single branch of the subclavian was carrying on the collateral circulation, and that this branch was on the cardiac side, Dr. Smyth considered the internal mammary the one most likely to be the channel of the retrograde current, from its free anastomosis with the deep epigastric. On October 4 a ligature was placed on the artery in the third intercostal space. The patient left in a month, some slight improvement being thought to have taken place in the tumour. A small abscess under the clavicle was opened and disappeared. On March 29, 1875, he returned because of a recurrence of the abscess, which had become large and prominent. It was tapped, and pus, mixed with blood of a dark colour, was withdrawn. He left hospital at once, and the day but one afterwards returned with the aneurism ruptured into the sac of the abscess. Dr. Smyth determined to make one more effort. He laid open the aneurism, scooped out the clots of blood as quickly as possible, hoping to be able to reach the mouth of the vessel supplying the sac, but not knowing the direction of the current, and the hæmorrhage being very great, he was compelled to give up the search. The patient gradually sank, and died on April 6, 1875.

The arteries were carefully injected through the femoral, and a dissection was made by Dr. Souchon. The innominate was injected to the point of ligation, where it suddenly became reduced to a bundle of fibrous tissue. The external and internal carotid and branches were well filled. The subclavian was impervious from its origin to within a quarter of an inch of the thyroid axis, all the branches of which were pervious. The vertebral originated as a fibrous cord, but at the fourth cervical vertebra it became pervious. The internal mammary was slightly distended from its origin down to the first intercostal space. From this point it became impervious to some distance beyond the point of ligation. On the distal side of the sac the subscapular branches were well distended, very tortuous,

and communicated with perforating branches of the intercostals. The axillary artery was distended. There was a high division of the brachial. It was evident that the blood had passed through the intercostals into the subscapular and so on to the axillary artery into the aneurism. Dr. Smyth observes that the case was seen by Dr. Robert M'Donnell, of Dublin, and other visitors, after the ligature of the internal mammary, but that the source of supply to the tumour was not suspected. The total absence of pulsation in the lower end of the axillary and in the brachial arteries created a strong impression that the blood did not come in the distal direction. The circulation of blood to the arm was peculiar. The subscapular ran up in a nearly straight course to the aneurism, and the retrograde current through it went into the sac. Immediately afterwards a direct current from the aneurism returned through the axillary and brachial, but without any perceptible pulsation in these vessels. The aneurism was re-formed on this retrograde current circulating towards the heart, and Dr. Smyth is not aware of any previous case in which an aneurism was ever reproduced in this way.

The author proceeds to discuss the question of collateral circulation, and observes:—

“The collateral circulation is always carried on through a single branch into an artery beyond an obstruction to the direct current through it; and but a single branch carries on the retrograde circulation into an artery on the distal side of an aneurism after it is cured. It was my belief in this fact that induced me to tie the internal mammary artery; and the *post mortem* shows that I was right in theory, but that I should have ligated the subscapular instead of the internal mammary.

“When a collateral circulation takes place in consequence of an obstruction to the direct circulation in an artery, the direct current must cease at the point of obstruction the instant the collateral circulation becomes established. The direct circulation impinges on the obstruction on the proximal side, and the collateral circulation impinges on it from the distal side.

“To those who have hitherto believed that a collateral circulation could take place into the distal end of a ligated artery, through a number of branches, that a collateral circulation could become gradually established during the increase of an aneurism, and that a direct and a collateral circulation could circulate together in an artery, the assertions just made, with regard to the collateral circulation, will certainly be new, if not startling. It is only necessary, however, to take a plan or sketch of the arteries and trace upon it the collateral circulation coming in from

different branches, with the direct circulation at the same time going on in the same artery, to see the utter impossibility of any such circulation as that generally believed in ever taking place. Opposing currents cannot circulate in the same artery without interfering with each other; one must arrest the other."

When a ligature is applied close to an aneurism, on the cardiac side, there is no direct current to oppose the collateral circulation on the distal side, and cure is simple; but when the ligature is placed at some distance from the tumour on the cardiac side, with branches intervening between it and the aneurism, this process of cure becomes complicated. The collateral circulation is then sometimes established on the cardiac side. This occurred through the vertebral in Banks' case.

If the collateral circulation had here changed to the distal side, with the vertebral remaining open, the collateral circulation on the distal side could not have passed to the other branches on the cardiac side of the aneurism, for the current from the vertebral would have supplied these branches and opposed the retrograde current through the aneurism. As it was, however, it is probably safe to say that no such circulation ever existed before. The collateral flow, established on the distal side by the ligation of the branch carrying on the collateral circulation on the cardiac side, passed through the aneurism to the branches on its cardiac side.

Dr. Smyth arrives at the following conclusions concerning the cure of aneurism. The conditions applying to the particular case mentioned are enclosed in brackets:—

"1. The complete cure of aneurism, that is, solidification and absorption of the tumour, with the occlusion of that portion of the artery involved in the aneurism, always results from the total arrest of the circulation of blood in the aneurism.

"2. When a cure of aneurism follows from procedures lessening the force of the direct circulation to the aneurism, or from increasing the obstruction to the circulation in the aneurism, or from obstructing the circulation in the artery or arteries on the distal side, the total arrest of the circulation in the aneurism, required to effect a cure, is caused by the establishment of a collateral circulation on the distal side of the aneurism.

"3. A collateral circulation is established on the distal side of an aneurism, when the force of the circulation in the distal continuation of the artery involved in the aneurism becomes reduced to a certain degree below the force of the circulation in its anastomosing arteries.

"4. The collateral circulation on the distal side of an aneurism opposes

the direct circulation through the aneurism. The retrograde collateral current must arrest the obstructed direct current. [The collateral circulation under extraordinary circumstances may establish a retrograde current through the aneurism to the artery and its branches on the cardiac side, if this artery is occluded on the cardiac side of the branches.]

"5. The collateral circulation is always carried into the distal continuation of an obstructed or occluded artery, through a single branch. A careful consideration of the currents in the circulation will show a necessity for one branch alone carrying the retrograde current, and a necessity for some action controlling this and regulating the circulation in the communicating or anastomosing branches between arteries. Aneurisms are not the only accidents to the circulation requiring the establishment of a collateral circulation. It is reasonable to suppose that during health temporary obstruction to the circulation in an artery gives rise to a collateral circulation—ceasing on removal of the obstruction and restoration of the direct current.

"6. The collateral circulation consequent upon obstruction to the direct circulation in an aneurism, and upon obstruction to the circulation in the artery or arteries on the distal side, is always established on this side. In the use of compression or ligation on the cardiac side, at some distance from the aneurism, causing a greater obstruction to the direct circulation than that arising from the aneurism, the collateral circulation is occasionally established through a branch on the cardiac side of the aneurism, but on the distal side of the greater obstruction. In the event of a complete cure following the establishment of this proximal collateral circulation, the cure is brought about by the subsequent establishment of a distal collateral circulation which arrests the proximal collateral current through the aneurism.

"7. In all aneurisms, except sacculated aneurisms, involving the portion of the wall of an artery, or aneurisms through which the circulation is totally arrested by the use of the ligature, or by complete obstruction in the sac of the aneurism, the cure is owing to the establishment of a collateral circulation on the distal side of the aneurism, which arrests the direct circulation in the aneurism.

"8. When the collateral circulation becomes permanently established on the distal side of an aneurism, its cure is certain to follow, unless hæmorrhage, rupture, or suppuration of the sac, should ensue [or a retrograde current through the aneurism from the collateral circulation to the artery and its branches on the cardiac side should be established]."

Finally, Dr. Smyth holds that:—

"The theories advanced to explain the cure of aneurism, without taking into consideration the action of the collateral circulation, are no

well founded. It is held that a weak current of blood circulating through an aneurism forms a *coagulum*—a deposit of fibrin in the sac of a different kind from that left by a more active or stronger current—and that the deposit from the weaker current is capable of totally arresting the circulation of blood through the aneurism; of solidifying and of becoming absorbed; leaving the artery permanently occluded. Our present case has proved all these theories untenable; and the *post mortem* shows that no arteries were permanently occluded except those in which the circulation was totally arrested. The aneurism was absorbed, and was reproduced by a weak current; and for ten years a weak current circulated through it, and still the aneurism was not completely cured."

A NEW METHOD OF TREATING EXTERNAL ANEURISM.

Dr. Walter Reid, R.N., gives the details of a case of popliteal aneurism which he successfully treated with Esmarch's bandage. He had already tried flexion and Carte's tourniquet, but, these means failing, he proposed to try the elastic bandage. It was passed very lightly over the tumour, and carried as high as the junction of the lower and middle thirds of the thigh. After fifty minutes, the patient having complained of severe pain above the seat of the constriction, a Carte's compressor was applied to the femoral at the pelvic brim, and the elastic tubing removed. The compression was used as a precaution to prevent the blood-current through the main artery from breaking down and washing away the newly-formed clot which it was expected had formed in the sac. When the compressor was raised a few minutes afterwards, no pulsation could be detected in the aneurism. The cure was complete.

DUPUYTREN'S FINGER CONTRACTION.

Many methods have been proposed for the treatment of the unsightly and maiming finger-contractions which depend upon an altered condition of the palmar fascia, since the disease was first described by Dupuytren. They have been uniform in respect of their insufficiency, and in the disappointment which has awaited both surgeon and patient. Dr. Madelung, of the University Hospital, Bonn, claims, however, that the operation devised by Professor Busch is one which may be had recourse to with confidence in this distressing affection.

The small fatty aggregations which are found in the fascia of children, and also of adults, under the palmar integument, have for

their function to moderate pressure and to distribute it over a larger area. By the disappearance of the fat, single regions of the palm become more exposed to a constant pressure, become more easily injured, especially those which are opposite the firm points, such as the heads of the metacarpal bones and the flexor tendons. The frequent injurious exposure evidently excites the now-unprotected tense tissue of the palm to a chronic inflammation—leads to hyperplasia of the normal fibres, and finally to their shrinking, with permanent bending of the fingers.

The operation proposed by Busch is thus described, taking as an example a contracted ring-finger:—

“After the patient is placed under the influence of chloroform, his hand is laid on its back on a firm support. The hands of an assistant fix the forearm and the tips of the fingers. A piece of skin of an acute triangular form is raised, its base falling into the furrow, separating the bent finger from the palm of the hand. Its apex meets that point of the palm of the hand where, with the utmost stretching of the same finger, diseased fibres of the connective tissue of the palm of the hand are clearly discernible. The piece of skin is raised, beginning at the top, from the parts beneath, with the most extensive removal of the subcutaneous connective tissue. During the division of this tissue—that is to say, of the numerous firm connecting fibres which ascend from the palmar fascia to the skin, the bent finger already allows itself to be somewhat stretched. Then the operator pushes the scalpel along the whole piece of the fascia thus laid open, with small incisions into every place where firmer fibres show a stronger tension. Thus an entire portion of the fascia may be incised without danger of a lesion of the sheath of a tendon. The finger slowly stretches until extension is thoroughly accomplished. The piece of skin then contracts considerably, rolling itself with its point a little inward. During this extension, part of the flat wound is uncovered. It is often possible, however, to unite the lower points of the double-winged wound by sutures, by drawing together the edges of the skin, and thus to diminish the wound. But if the sutures should in any way stretch the skin, the sewing had better not be attempted. The operation hardly causes any bleeding. A light bandage closes the wound. The hand is then kept by the patient in a sling, without the slightest attempt to preserve the extension. The pain is thus reduced to a minimum in the immediate neighbourhood of the wound, and the patients are hardly ever feverish. Extension movements with the finger are only made when the wound has entirely granulated, and then only in a light, gentle way. At first, wood cylinders of various sizes are laid into the hand; later, the hand is stretched on a back-splint. Active and passive movements are

now to be made in and during the time the hand-bath is used for the cleansing of the wound.

“More complicated apparatus than the above are never required. The healing of the wound, accelerated, perhaps, by skin-grafting, is accomplished in three or four weeks. The movements made with his hand by the patient on the resumption of his former occupation, and which his desire to prevent a possibly new contraction causes him to make of his own accord, the occasional nightly extension of the hand on a board, suffice to insure and complete the desired result.”

Dr. Madelung has performed the operation several times, and has had uniform success. In no instance has the disease returned in the parts operated upon. The bloodless method of Esmarch and the antiseptic method of Lister are adopted with the best results. He cautions operators against all movements and all stretching on a hard board before the complete formation of granulations in the wound.

Dr. Post, of New York, in the second number of the new publication, *Archives of Clinical Surgery*, recommends division of the bands by incisions made at a number of points wherever they are capable of relieving tension. The adhesion of the palmar fascia to the skin is so close that a strictly subcutaneous section cannot be made, but the skin should not be divided more extensively than is absolutely required. The wounds should be at once closed with adhesive plaster, and the fingers should be brought into an extended position, and so retained by a posterior splint.

THE TREATMENT OF ABSCESES BY HYPERDISTENSION WITH CARBOLISED WATER.

This method of treating multilocular abscesses is advocated by Mr. Callender (*Brit. Med. Journal*, November 4, 1876), who is of opinion that by it we are enabled to bring the carbolised water into contact with the surfaces of multilocular cavities more freely than by any other means. If no sinus exist, an opening is made of sufficient size to admit one finger. The pus is allowed to escape, the abscess being emptied as completely as possible. The nozzle of a syringe is then introduced, and an amount of carbolised water (one part in 20 diluted to 1 in 30 by the addition of warm water) is injected in excess of the quantity of pus which has been evacuated. When distension has been effected the fluid is allowed to escape, and if much pus be mingled with it, a second injection may be practised. An elastic drainage-tube is inserted, and over the end

of this, and over the wound, a piece of lint twice folded and soaked in carbolised oil (1 in 12) is laid; this covered with a sheet of gutta-percha tissue and some tenax. Subsequent treatment consists in the renewal of these dressings, probably daily. The tube is gradually shortened as the abscess wall contracts, and through its canal, if there be any sign of puriform discharge, a little carbolised water may occasionally be injected. Under this treatment the discharge of pus ceases; a limited serous fluid in small quantity drains away, and presently only a sinus remains. In cases which he gives the best results were obtained.

WRINKLING OF THE LIGAMENTUM PATELLÆ A SIGN OF FEMORAL SHORTENING.

Dr. Cleeman (*Philadelphia Med. Times*, No. 221) calls attention to wrinkling of the ligamentum patellæ as a sign of femoral shortening. From attachments of the muscles and the ligaments the latter must become flaccid when there is shortening of the thigh, if the limb be placed in a position of extension, and the relaxation will be most evident in the inelastic tissue of the tendon of attachment, and particularly noticeable in that portion between the patella and the tubercle of the tibia, where this structure finds its greatest development. When, as in old age, the pad of fat which lies under the ligament diminishes in size, the wrinkling may be very conspicuous and sufficient to suggest rupture. In the case of a vigorous adult there may be a mere crease. It is evident that the liability to variation in the amount of subjacent elastic fat must be taken into consideration in attempting to estimate degrees of shortening from the depth of the wrinkle in the ligament.

PERINEAL SECTION.

The perineal operation for impassable stricture is one of the most difficult in surgery. Mr. Wheelhouse, of Leeds,* has for some years followed a method devised by himself, and has had considerable success. The proceeding, although already brought before the profession, seems to have been forgotten, and as the distinguished author of it vouches for his results, details may be here briefly summarised. The instruments required are—a special staff fully grooved through the greater part, but not through the whole of its extent, the last half of the groove being “stopped”

* British Medical Journal. June 24, 1876.

and terminating in a rounded button-like end; a well-grooved and finely probe-pointed director; Teale's probe gorget; a straight probe-pointed bistoury; a short silver catheter with elastic tubing; ordinary scalpels, &c. The further steps are thus described:—

“ The patient is placed in the lithotomy position, with the pelvis a little elevated, so as to permit the light to fall well upon it, and into the wound to be made. The staff is to be introduced with the groove looking towards the surface, and brought gently into contract with the stricture. It should not be pressed much against the stricture for fear of tearing the tissues of the urethra, and causing it to leave the canal, which would mar the whole after-proceedings, which depend upon the urethra being opened *a quarter of an inch in front of the stricture*. Whilst an assistant holds the staff in this position, an incision is made into the perinæum, extending from opposite the point of reflection of the superficial perinæal fascia to the outer edge of the sphincter ani. The tissues of the perinæum are to be steadily divided until the urethra is reached. This is now to be open *in the groove* of the staff, *not upon its point*, so as certainly to secure a quarter of an inch of healthy tube immediately in front of the stricture. As soon as the urethra is opened, and the groove in the staff fully exposed, the edges of the healthy urethra are to be seized on each side by the straight-bladed nibbed forceps, and held apart. The staff is then to be gently withdrawn, until the button-point appears in the wound. It is then to be turned round, so that the groove may look to the pubes, and the button may be hooked into the upper angle of the opened urethra, which is then held stretched open at three points, and the operator looks into it immediately in front of the stricture. Whilst thus held open, the probe-pointed director is inserted into the urethra; and the operator, if he cannot see the opening of the stricture, which is often possible, generally succeeds in very quickly finding it, and passes the point onwards *through* the stricture towards the bladder. The stricture is sometimes hidden among a crop of granulations or warty growths, in the midst of which the probe point easily finds the true passage. This director having been passed on into the bladder (its entrance into which is clearly demonstrated by the freedom of its movements), its groove is turned *downwards*, the whole length of the stricture is carefully and deliberately divided on its under-surface, and the passage is thus cleared. The director is still held in the same position, and the straight probe-pointed bistoury is run along the groove, to insure complete division of all bands or other obstructions. These being thoroughly cleared, the old difficulty of directing the point of a catheter through the divided stricture and onwards into the bladder is to be overcome. To effect this, the point of the probe gorget is introduced into the groove in

the director, and, guided by it, is passed onwards into the bladder, dilating the dividing stricture, and forming a metallic floor, along which the point of the catheter cannot fail to pass securely into the bladder. The entry of the gorget into the latter viscus is signalised by an immediate gush of urine along it.

"The short catheter is now passed from the meatus down into the wound; is made to pass once or twice through the divided urethra, where it can be seen in the wound, to render certain the fact that no obstructing bands have been left undivided; and is then, guided by the probe dilator, passed easily and certainly along the posterior part of the urethra into the bladder.

"The gorget is now withdrawn; the catheter fastened in the urethra, and allowed to remain for three or four days; the elastic tube conveying the urine away to a vessel under or by the side of the bed.

"After three or four days the catheter is removed, and is then passed daily, or every second or third day, according to circumstances, until the wound in the perinæum is healed; and, after the parts have become consolidated, it requires, of course, to be passed still from time to time to prevent recontraction."

Teevan* adopts Wheelhouse's staff, but observes that it is not always possible to say positively that the probe has gone into the bladder, and that in other cases it is too large to pass through the stricture. The urethra having been laid open on the grooved staff, he uses very fine whalebone bougies with olive ends. It sometimes happens that there are several false passages or fistulæ. Each of these openings ought to be filled by a bougie, which is to be left there, and another passed, till at last one vanishes apparently into the bladder. Before dividing the stricture, he demonstrates conclusively whether the bougie has really reached the bladder or not, by sliding over it a fine silver tube, which is open at both ends, has a slit for the tenotome to run in, and is fitted with the vesical half of the elastic catheter, which slides upon the tube. If urine come out, the stricture is to be divided by sliding a probe-pointed tenotome along the slit in the tube, which is to be held in such a manner that the groove or slit shall look upwards. The deep part of the urethra is thus divided subcutaneously without enlarging the original wound. The catheter is then slipped into the bladder over the tube.

* B. Med. Journ., p. 428. 1876.

SUPRA-PUBIC CYSTOTOMY.

M. A. Amussat gives the particulars of a case* in which he performed the operation of supra pubic cystotomy, involving incision of the anterior wall of the bladder upon the calculus. A boy of four and a half years came under observation in 1874, with symptoms of stone, but none could be discovered with the sound. At a second examination in the present year, a very large calculus was detected. The operation was determined upon, and the child having been chloroformed, the bladder was distended with tepid water. The tissues in front of the linea alba were divided to the extent of five centimetres; a small opening was then made near the pubis, and this was further enlarged with a hernia knife to the extent of four centimetres. After having felt the anterior wall of the bladder and explored the *bas fond* by the rectum with the finger, without detecting the stone, M. Amussat introduced a small lithotrite, and only succeeded in catching the foreign body by opening the blades of the instrument more than five centimetres. Then raising it he made its anterior extremity project about a centimetre below the umbilicus. During all these movements the abdominal muscles were contracting violently, and expelled the contents of the bladder and of the rectum. Not wishing to open the abdomen upon the calculus, he endeavoured, by a number of very gentle manœuvres, to withdraw it from the position in which it was, and he succeeded in bringing it beneath the anterior wall of the bladder opposite the incision. Giving the lithotrite to one assistant, while another fixed the abdomen, Amussat placed his index finger upon the anterior wall of the bladder in contact with the inferior extremity of the stone, and using his nail as a guide, made an incision in the bladder of more than two centimetres in length, without wounding the peritoneum. This allowed him to touch the stone with the pulp of his finger. When taking the lithotrite in his right hand he allowed the stone to drop down, following it in the bladder with his finger. The instrument was withdrawn, and he tried to bring the end of the stone into the opening. It was only after very prolonged efforts that he succeeded, and then seizing it with a small forceps, aided by his left fore-finger, he was able to remove it. A catheter was introduced into the bladder through the wound. The child had perfectly recovered in about three weeks. The stone, which is here figured in outline and in section, weighed forty-five grammes,

* *Le Courier Medical*. P. 219. 1876.

and was two and a half centimetres in diameter. Its composition was urate of ammonia.



Amussat has performed the operation on an old man aged sixty-three, and gives notes of some cases in his father's practice. The proceeding is sufficiently easy when the great axis of the stone does not exceed six centimetres, when the bladder can be distended sufficiently to withdraw the peritoneum from the pubis, and when the patient is in that state of insensibility which is usual in chloroform administration; but it is not so when one or more of these conditions is wanting. The difficulties in his case were produced by contractions of the bladder and the abdominal muscles. He thinks it better to use chloroform only until the incisions are made down to the bladder. If the viscus should then contract on being touched, he recommends that the use of the anæsthetic should cease, and that the operation should be completed when the patient is perfectly calm.

UNRECOGNISED DISLOCATIONS OF THE SHOULDER-JOINT.

In the *Archives for Clinical Surgery*, Dr. Stephen Smith calls attention to a form of dislocation of the shoulder not usually recognised. In two cases there was evident loss of rotundity in front and below the acromion, and prominence posteriorly; the arm hung by the side, the elbow being thrown slightly forward and outward, There was very good motion except in abducting the arm and in placing the arm upon the head, and the power of the arm was increasing. The head of the humerus was found behind the glenoid cavity, but in close contact with its posterior margin. The dislocation was easily reduced by traction on the arm in a direction forwards and downwards. Le Gros Clark inclines to regard this as a partial dislocation (see *St. Thomas Hosp. Rep.*, Vol. V.), the head resting on the posterior edge of the glenoid cavity, and the capsule being unruptured.

A NEW METHOD OF REDUCING DISLOCATIONS OF THE SHOULDER.

Kuhn, of Elbeuf (*Paris Médical*, Mars., 1876, and *London Med. Rec.* July, 1875), recommends the application of force to the scapula, while the humerus is fixed, in the reduction of shoulder dislocations:—

“A cushion of a conical shape is to be placed in the axilla, the base of the cone downwards; the surgeon, standing at the patient's side, lightly draws the arm downwards, and at the same time presses it firmly against the pad in the axilla, so as to make it into a lever of the first kind. Then, taking the inferior angle of the scapula in the other hand, he raises that bone and gives it a see-saw motion. Coaptation soon follows, the two parts returning to their natural position, by a simultaneous effort made on the lower extremity of the humerus and the inferior angle of the scapula. If the head of the humerus be displaced forwards, the angle of the scapula should be directed outwards, at the same time that it is raised. It should be directed inwards if the dislocation be backwards. If any difficulty be experienced in making the reduction, the task of holding and directing the arm should be confided to an assistant.”

INFLUENCE OF PERIPHERAL LESIONS ON THE CEREBRAL CONVOLUTIONS.

M. LUYS has brought four cases before the Société de Biologie tending to prove that when a region of the sensibility remains long in disuse absorption of brain tissue results in certain determinate spots. In the first case, that of a woman who died twenty years after the amputation of the right limb, M. Luys found a remarkable atrophy of the ascending left frontal convolution. The atrophy extended by means of the commissural fibres of the corpus callosum as far as the corresponding point of the right lobe. The second case was a woman who had been perfectly deaf upwards of forty years. M. Luys discovered, besides atrophy of the acoustic and glosso-pharyngeal nerves, an abnormality at the level of the ascending convolutions. The fissure of Rolando was filled up in one place by a sort of bridge of cerebral substance thrown between these two convolutions. In a woman who had amaurosis for twelve years he found at the level of the two first frontal convolutions small superficial ulcerations of the cerebral substance, and in the fourth case, a woman who was reduced to a state of almost complete immobility by chronic rheumatism, there was observed a clearly marked deformity of the folds of the ascending parietal convolution.—*Le Progrès Médical*.

S. W.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

SAMUEL GORDON, M.B., President.

GEORGE F. DUFFEY, M.D., Honorary Secretary.

Wednesday, November 1, 1876.

DR. GORDON, President, in the Chair. .

DR. GEORGE F. DUFFEY, Honorary Secretary, read the minutes of the last meeting.

The PRESIDENT having opened the Session with some remarks,

DR. W. G. SMITH read a paper "On some new Tests for Bile Pigment." [This communication will be found at p. 449.]

PROFESSOR EMERSON REYNOLDS quite concurred with Dr. Smith in his opinion as to the value of the nitric acid test. In the course of experiments last summer he (Dr. Reynolds) was led to the use of slightly diluted instead of the usual concentrated nitric acid in the ordinary laboratory work, and he had come to the conclusion that any oxidising agent would suffice for the conversion of the bilirubin or brownish colouring matter into the biliverdin or green colouring matter, as the change seems to consist in the addition of a molecule of water and an atom of oxygen to the brown-coloured substance. Iodine he considered a somewhat unsatisfactory agent for effecting this oxidation; the iodine solution being so strongly coloured that, unless the process was very carefully conducted, it might lead to error. At the same time, if properly employed, it yielded exceedingly nice results. The oxidising agents he suggested to Dr. Smith seemed to fulfil the necessary conditions probably better than iodine. The ferric chloride reacted exceedingly well, but was open to the objection made by Dr. Smith, that many other substances besides bile compounds affected the reduction of the iron salt. The phosphoric solution of peroxide of lead acted with extreme facility, and would probably turn out to be the best of these test agents. The lead compound present in the phosphoric solution is a most comple

body, and is very little known to chemists. Fortunately it can be easily prepared. It is only necessary to take the ordinary diluted phosphoric acid of the pharmacopœia concentrated by evaporation to a fourth of its bulk, and shake it up in a bottle with the ordinary brown or puce-coloured peroxide of lead. The mixture, after digestion in the cold for a day or so, with occasional agitation, constitutes the reagent. The clear portion of it, decanted off, can be used as a bile test at once. This liquid is rather more permanent than the acetic solution of peroxide of lead. In using these tests the only thing to be guarded against is the use of overmuch of any of the oxidising agents, the effect of which is to push on the oxidising process too rapidly; so that instead of the dingy-brown colouring matters being converted to green, they pass beyond that stage, and resinous products are obtained which are not characteristic and nullify the testing. He (Professor Reynolds) had also tried ozonised ether, and had found that, although containing oxygen very loosely in combination, a few drops of it shaken up with a solution of bile communicated the green tint to it. He trusted Dr. Smith would be able to continue his experiments with these new reagents, and to work out some thoroughly useful and reliable tests for bile which, he could state from his own experience, were decidedly needed.

DR. FINNY said he had employed the iodine test for bile in two cases in his hospital practice, and could say, from experience, that it answered remarkably well.

DR. FOOT said he had seen the iodine test for bile pigment worked in Dr. Smith's hands with very neat results. It had occurred to him that perhaps the colour-reactions produced by these oxidising agents might be employed with advantage to discover the etiology of different kinds of jaundice. It would be important to ascertain if the results of the iodine test in hæmatogenic jaundice, as observed in typhus, pyæmia, and phosphorus poisoning, when the colouring matter was derived from transformed blood pigment, were similar to those obtained in mechanical jaundice, where the colour was derived from reabsorbed bile. Such observations might lead to very desirable indications of treatment.

DR. SMITH, in reply, said the great object of inquiry was to establish the truth of the test. Another experiment would be the testing of a mixture of human bile with urine, in order to see if a similar bile pigment could be obtained from ieteric urine. Such a result would establish the identity of the fresh pigment derived from the gall bladder with the pigment found in the urine after it was transmitted through the system.

DR. MACSWINEY read a paper "On Syphilitic Phthisis." [It will be found at page 456.]

THE PRESIDENT said he recollected a former discussion on this subject in the Medical Society, at which a very eminent surgeon, the late Mr. Hutton, said he had had the advantage of seeing several cases of the kind alluded to by Dr. MacSwiney, under the care of the late Mr. Colles, whose view of them was the same as that expressed by Dr. MacSwiney—namely, that they were cases of diseased lung, of which the primary cause was syphilis. Mr. Colles treated those cases persistently with mercury, and eventually with a success beyond his expectations; and, from the success of his treatment, he argued backwards to the truth of his theory. There was one point, however, which Dr. MacSwiney had mentioned, and from which he drew no conclusion, but on which Mr. Hutton dwelt particularly, and that was the position of the disease in the lung. Dr. MacSwiney had stated that, in his cases, the physical signs were most marked about the centre of the lung. Mr. Hutton, after having surmised the cause of the affection in the cases seen by him to be syphilis, finally concluded, without hesitation, that such was the fact wherever he found the physical signs not at the apices of the lungs, but in the centre, or towards the base.

DR. FOOT observed that the tendency of the present time, as far as he could gather it, was towards the unity of phthisis. This was probably, in part, the result of a reaction against the multiplicity of forms of the disease which has lately increased to at least a dozen varieties. He would prefer to speak of the case, read by Dr. MacSwiney, as a case of phthisis in a syphilitic person, than of it as one of syphilitic phthisis. The lesions in the lungs of syphilitics were not sufficiently constant to warrant a special form of phthisis to be based upon them. In the case of new-born children it was different; it was in them pulmonary syphilis was to be best studied; the white infiltration in them, described by Virchow, was characteristic. No doubt laryngeal and pulmonary syphilis often ran their course unrecognised under the form of phthisis. In any case of phthisis, if there was the least suspicion of syphilis, it was most important to examine the larynx carefully; the larynx was the locality, *par excellence*, in which syphilis and phthisis intermingled, and inasmuch as the existence of syphilis introduced a favourable element into such cases, the discovery of syphilitic appearances in the larynx might suggest a treatment which would prove successful. Cases of apparently hopeless phthisis had been cured by anti-syphilitic treatment. He regards syphilis as a most important influence in the etiology of phthisis, but not as capable of establishing a distinct variety of the disease. The curability of syphilitic phthisis, he thought, depended on the isolated manner in which the syphilomata or gummata were deposited through the lungs; when one of these had become cheesy and had softened, it blew itself out, as it were, and there was not beside it, as

in other cases of destructive disease of the lungs, another infiltration, only less ripe, to commence again the same process. It was also quite possible for a chronic pneumonia of the apex to occur in a constitution ravaged by syphilis, and its slight symptoms to be overlooked in the general suffering.

DR. HENRY KENNEDY could not help thinking that too many diseases were set down as having a syphilitic origin, whereas he believed that struma was an infinitely more common cause of disease than syphilis. As had been said by Dr. Foot, he believed the phthisis would have been just as likely to have ensued if from any other cause the general health of the patient had been seriously broken down or deranged. As to the treatment of cases in which they had reason to believe that syphilis was present, he recommended the use of sarsaparilla. He believed mercury to be a dangerous two-edged sword. The best form of sarsaparilla was the powder which was very much used a century ago. A couple of drachms of it were equal to a pint of the decoction, and if given in twenty-four hours were quite enough to produce all the useful influence of the drug.

DR. MACSWINEY, in reply, said of course it was plain that the question was, whether phthisis, arising in syphilitic patients, was to be regarded as idiopathic phthisis, or as arising from the poison of the syphilis. He believed he had adduced cogent arguments to show that pulmonary consumption was frequently due to the presence in the constitution of syphilitic virus. He was not aware what the Continental authorities were who opposed those views. Fournier, one of the most eminent physicians and pathologists of the present day in France, held opinions diametrically opposite to those of Dr. Foot. He maintained that pulmonary decline was caused by syphilitic gummata; and he described the resemblances and the distinctions between the gummata and the tuberculi of consumption. Virchow had pointed out a syphilitic affection of the lungs in still-born children—a form of infiltration which he calls “white pneumonia,” and he subscribes to the presence in it of the syphilitic virus. Other authorities of the present day had pointed out the anatomical resemblances and distinctions between the tuberculi and the gummata. There was an analogy between these, while in some respects they were different, the gummata being permeated by blood-vessels and having cicatrices after recovery had taken place.

DR. FOOT referred Dr. MacSwiney to the articles in Wagner’s “Manual of General Pathology” and in Ziemssen’s “Cyclopædia of the Practice of Medicine,” in which, while the unity of phthisis was maintained, the diversity of its etiology was also contended for.

• The Society then adjourned.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

THIRTY-EIGHTH ANNUAL SESSION.

Saturday, April 8th, 1876.

LOMBE ATTHILL, M.D., President, in the Chair.

On a Case of Multilocular Ovarian Tumour, complicated with Pregnancy, Rupture of a Cyst, and Peritonitis. By GEORGE H. KIDD, M.D., &c.

On the 5th March last I was asked to see a lady residing in the South of Ireland, in conjunction with Drs. Scott and Benson, of Queenstown, and Dr. Harvey, Professor of Midwifery in the Queen's College, Cork. She was thirty-eight years of age; she had been treated some twelve months before for enlargement of the liver, but up till within a few weeks of the time we saw her had been of very active habits, and latterly had been engaged in prolonged and anxious literary work; she was now confined to bed, believed herself to be fully nine months pregnant, and expected every hour that labour would set in.

The abdomen was very large, measuring about forty-four inches in circumference, and its distension interfered much with the movements of respiration and the heart's action. It was tender to the touch, and though now easier, the patient said she had for some time been liable to severe paroxysms of pain; she shrank from being touched; her expression was one of great anxiety; she could only take food in very small quantities, and had frequent vomiting; she was greatly emaciated, and had a considerable amount of fever. Her pulse was 112; she suffered from night-sweats, and her urine was loaded with lithates; the lower portion of the abdomen and the lower extremities were cedematous, and much swollen.

On coming to inquire as to the existence of pregnancy, we could derive but little assistance from the history of the case. There had been irregular vaginal discharges, which had ceased for some months; the breasts were so atrophied that they could barely be distinguished, and nothing could be learned from them. By a vaginal examination the uterus was found lying high up in the pelvis; the os was so open that the finger could enter it as far as the first joint; the body of the uterus could be reached with some difficulty, but was found to be in some degree enlarged, and by the "ballotement" process a small floating

body could be indistinctly recognised. The margins of the os were soft and pulpy. On examining the abdomen it was found to fluctuate very perceptibly all over; it was dull on percussion anteriorly as far up as the epigastrium. As the patient lay on her back, the most anterior part of the lateral region gave out a clear sound on percussion, and posteriorly it was again dull. When the patient lay on either side, the region from which a clear sound could be obtained on the upper side was greatly increased, and extended more towards the spine. As she lay on her back, a layer of fluid could be displaced by deep pressure, and a solid body reached in the lower and anterior part of the abdomen. It was difficult to trace the outline of this, but on careful examination we believed it to be the uterus, and as large as at the sixteenth or eighteenth week of pregnancy. Above this a much larger body could be reached—one evidently the cause of the greater part of the abdominal enlargement. It was irregular in outline, movable, partly solid and partly fluid, and presented several cysts of various sizes, in which fluctuation was very perceptible.

The diagnosis arrived at was that the case was one of multilocular ovarian disease, complicated with pregnancy of four or five months duration; that there was a considerable quantity of fluid free in the cavity of the peritoneum, and some subacute peritonitis going on, the result probably of the rupture of one of the cysts.

The mode of treatment to be adopted in such a case engaged our most anxious consideration. Three methods were discussed:—1st. Induction of premature labour; 2nd. Tapping the abdomen; 3rd. The removal of the ovarian tumour.

The exhausted condition of the patient at once excluded all thought of the immediate performance of ovariectomy, though it was evident that this operation, if it should ever become practicable, afforded the only chance of saving her life. The time that would be required for the induction of labour, the risk of hæmorrhage after the expulsion of the uterine contents, and which, in the then state of the abdomen, could not be easily controlled, and the increased exhaustion likely to follow the operation, forbade the adoption of this method. There remained, then, the tapping of the abdomen. By this means the speediest relief would be obtained. Time would be gained for the patient to recover strength. The accuracy of the diagnosis would be tested, and an opportunity afforded for the further consideration of the question as to the removal of the tumour.

It was accordingly decided to tap the abdomen, which was at once done, and five quarts of fluid drawn off. The greater part of this came from the cavity of the peritoneum, and was thin and serous. When it ceased flowing, the trocar was pushed into one of the large cysts in the tumour, and it was emptied, the discharge being thick and mucilaginous.

The trocar was then pushed on into three adjacent cysts, one after the other, and they also were emptied of their contents.

The outline of the gravid uterus could now be clearly traced, a placental murmur distinctly heard, and a faint foetal heart indistinctly.

The result of the tapping was to afford the patient very great relief. She slept well that Sunday night. The pulse became less frequent. The tenderness of the abdomen was relieved. She was able to take and retain food, and she regained so much strength that, on Saturday, the 19th, thirteen days after the tapping, she was able to take a journey of six hours to Dublin.

When I saw her on her arrival, and found how much her condition had improved, I recommended the removal of the tumour as the only possible means of saving her life. It was necessary, too, that no time should be lost about it, for the abdomen was again filling, and was four inches larger than when measured after the tapping, and her breathing was again interfered with. On the 21st of March Mr. Wells saw her, and recommended the removal of the tumour, and it was decided that the operation should be done the following day.

With a view to lessening the bulk, and so make the shock of the operation less severe, Mr. Wells tapped her on Tuesday evening, the 21st, but not more than five pints of fluid escaped; and on the following day (22nd March), at noon, he proceeded to complete the operation, assisted by Dr. Roe and myself, the patient being brought under the influence of methylene by Dr. Macnamara.

When the peritoneum was opened a large quantity of fluid escaped; then the pregnant uterus came into view, and afterwards the tumour. When Mr. Wells attempted to remove this, he found it so soft that it broke down under his hand, and it had to be removed piece by piece. There was abundant evidence of recent peritonitis. There was a large deposit of lymph on various parts of the peritoneum, and there were numerous recent soft adhesions between the tumour and the surrounding parts, as well as some rather firm ones between it and the omentum; two of these he tied and divided, cutting the ligatures short, and dropping them into the abdomen. The pedicle he also secured with a ligature, cutting the ends short, and dropping it into the abdomen in the same way. He then closed the wound throughout its entire extent. The entire mass removed weighed about 40 lbs.

About four hours after the operation uterine pains set in, and a foetus of between four and five months was expelled, fortunately without hæmorrhage or producing any depression.

The progress of the case from the day of the operation till the following Sunday was very favourable. The lady herself said she was more comfortable than she had been for months. The œdema of the abdominal walls and of the extremities quite disappeared; the pulse became less

frequent than it had been for some time before the operation; the temperature varied from 100° to 101°, 102°, and nearly 103°, and ultimately came down to 99°. However, there was fluid accumulating in the cavity of the abdomen, and at mid-day on Sunday a large quantity of this was forced out through the wound during a fit of vomiting. Great collapse followed, and when I saw her soon afterwards I found her pale, shrunken, and in a state approaching syncope. The collapse seemed to be due to the sudden removal of pressure from the abdominal vessels, as sometimes occurred when patients were tapped in an upright position with a large trocar. Stimulants were given freely, and the bandage tightened, and the symptoms of collapse soon passed off. After this there was a constant discharge of serum from the abdominal wound. She became like one suffering from hæmorrhage, and was evidently being run down by the constant drain of serum. There was no fever, no peritonitis, no symptom of pyæmia, but she was evidently dying, notwithstanding that she took food and stimulants very freely. At half-past seven o'clock on Wednesday morning, the 29th, she died, four hours and a half short of a week from the time of the operation.

There was no history of shock or sudden collapse in this case to indicate the period at which a cyst had ruptured, nor could it be positively asserted before the abdomen was opened that such had occurred, but of the presence of fluid free in the peritoneum and of peritonitis there could be no doubt, and the rupture of a cyst was regarded as the probable cause of these conditions. The peritonitis was the predominating feature of the case when it came under observation, and there can be no doubt that, if the condition of the patient had permitted, and unless we were to allow the pregnancy to deter us from it, the right course of treatment would have been the immediate removal of the tumour. Dr. Barnes has stated the argument in reference to this very clearly in his book "*On the Diseases of Women*" (pp. 396-7):—

"1. *How to deal with a case in which the cyst has ruptured, or has given rise to effusion of blood, to peritonitis, or to septicæmia.*

"This literally vital question has already been partly answered by anticipation. The argument may be stated as follows:—The case is, that the patient is in the most imminent danger from the shock, irritation, and loss of blood attending the injury. The shock may be regarded as a blow struck at the vital powers. We cannot lessen the shock given by this blow; but we may, in some cases where there is some rally, do good by removing that which is the cause of protracted shock. This cause consists in the irritation arising from the contents of the cyst, or the blood effused in the peritoneum, which irritation is quickly followed by inflammation. Of course the patient may sink rapidly under the primary shock, and thus defeat all idea of giving relief by operation.

"But, in not a few cases, the primary shock does not kill. The patient

however, will hardly pull through the secondary dangers of hæmorrhage and peritonitis, unless these be arrested in their course. There is the opportunity of trying to give relief to obviate these dangers. Here then is a case for the decisive application of the great law in medicine: remove the offending cause. If extirpation of a diseased ovary, which is slowly sapping the vital powers, be recognised as a justifiable operation, *à fortiori* must the operation be conceded as necessary when the diseased ovary is the source of instant danger to life. It would be difficult to answer *à priori* reasoning like this, except by urging that howsoever plausible in theory, it would be useless in practice. But even this answer, which until recently was still urged, is now deprived of force by the results of experience. When the irritating cause has been removed, the patient has recovered.

"Mr. Wells says* 'In several of my cases the operation has been performed after the cyst has burst, and its contents had escaped into the peritoneum. The peritoneum has been found intensely red, thick, soft, or villous, and occasionally covered by loosely adherent flakes of lymph. Yet the result has been surprisingly satisfactory. Twenty-four times has this complication presented itself out of the last 300 of my operations. Five of the patients have died, so that the ordinary rate of mortality does not seem to have been much augmented. At any rate the bursting of the cyst, or the filling of the peritoneum by oozing from the puncture made by tapping the cyst is no bar to the operation, but rather a reason for doing it without delay.'"

It remains then to consider how far the pregnancy should have affected the decision to be arrived at as to the further treatment of the case. The whole question of the treatment of ovarian disease during pregnancy is one of great importance and much difficulty. In a debate at the London Obstetrical Society, May, 1867, Dr. Barnes asserted "it might be laid down as a general law that nature could not tolerate the concurrent progress of these two conditions. Nature could hardly bear the concurrent growth of two tumours like the pregnant uterus and an ovarian tumour—something must give way;" and he recommended that premature labour should be induced. The debate in which these remarks were made was on a paper by Dr. Playfair, "On the Treatment of Labour complicated with Ovarian Tumour," in which he analysed fifty-seven cases collected from various authors. In these cases the tumours were all small, and only of importance because they lay in the pelvis and obstructed labour. In December, 1869, Dr. Braxton Hicks narrated to the same Society the details of seven pregnancies associated with ovarian cystic disease, in which the tumours, being of a large size, lay high in the abdomen. The pregnancies terminated without any serious

* Diseases of the Ovaries, 1872.

accident to mothers or children. And in March, 1870, I myself brought before this Society a paper "On Ovarian Tumour complicating Labour," in which the matter was considered under two heads—1st. Small tumours lying low down and obstructing labour; 2nd. Large tumours lying high in the abdomen. Under this latter division the histories were given of five pregnancies in two individuals, in which the tumours produced no serious inconvenience. In one of these cases the abdomen, some days after delivery, measured forty-eight inches in circumference, and this woman had several children subsequently without the tumour being interfered with.

In the second edition of Barnes' "Lectures on Obstetric Operations," 1871, he discusses this subject more fully than could be done in an extemporary debate. He describes the results of such cases very fully. If the tumour be of moderate size the pregnancy may, he says, go on to term, and delivery be accomplished without difficulty. Abortion or premature labour may occur spontaneously. If this do not occur the tumour will, he thinks, very probably give way, or there will be so much suffering and exhaustion from pressure that the patient will sink either before or soon after delivery; or the growth of the uterus may, in raising the tumour, roll it on its axis, twisting the pedicle so as to cause strangulation. Another event more common is, he says, simple rupture of the cyst, and if the patient escape the perilous period of pregnancy, she has to run the gauntlet of even greater perils during and after delivery. In the treatment of such cases Dr. Barnes strongly urges the induction of labour. "To do nothing," he says, "because pregnancy has often terminated without mishap, is simply trusting to chance; it is a surrender of judgment but too likely to entail unavailing regret." He would, it would appear, induce labour to prevent accidents in all cases where pregnancy is found in conjunction with ovarian tumours; but if the cyst should have ruptured, and the patient escape death from the shock, we should not hesitate, he says, to follow Mr. Wells' example, and remove the offending cause.

Mr. Wells has discussed the whole of this subject very fully in his book on "Diseases of the Ovaries," and, instead of attempting to lay down an absolute rule, has in the following propositions stated the treatment he recommends in the several varieties of the condition ordinarily met with:—

"1. Pregnancy and ovarian disease may go on together, and may end in the birth of a living child and the safety of the mother.

"2. But in a large proportion of cases, probably in nearly all where an ovarian tumour is large, there is danger of abortion; or, if the pregnancy proceed to the full term, of lingering labour and a still-born child; and throughout the later months of pregnancy there is danger of sudden death to the mother from rupture of the cyst or rotation of its pedicle.

"3. Spontaneous premature labour may not save the mother from these perils, and the induction of premature labour artificially almost implies sacrifice of the child with considerable risk to the mother.

"4. There is no proof that tapping an ovarian cyst is more dangerous during pregnancy than at any other time; and if there be a large single cyst, tapping will afford immediate relief to distension at a very slight risk to the mother, and lead to the natural termination of pregnancy in the birth of a living child, if proper precautions be taken to prevent the escape of ovarian fluid into the peritoneal cavity, and the entrance of air into this cavity, and into the cavity of the cyst. In cases of multilocular cyst tapping can be of very little use.

"5. In cases of multilocular cyst, or solid tumour, the rule should be to remove the tumour in an early period of pregnancy; and if an ovarian cyst should burst during pregnancy at any period, removal of the cyst and complete cleansing of the peritoneal cavity may save the life of the mother, and pregnancy may go on to the full term.

"6. Of three cases on record where a pregnant uterus has been punctured during ovariectomy, the only recovery was in the one case where the uterus was emptied before the completion of the operation."

Thus it appears that whatever difference of opinion there may be as to the treatment best to be pursued where pregnancy is found to be complicated with a unilocular cyst, or even a moderate-sized multilocular one, theory, our best authorities, and actual experience teach that where there is a multilocular tumour with peritonitis, the result probably of the rupture of a cyst, the best prospect of saving the patient's life is afforded by removing the tumour, notwithstanding the existence of pregnancy.

Saturday, June 10th, 1876.

LOMBE ATTHILL, M.D., President, in the Chair.

DR. ATTHILL said:—I am about to occupy the Society only for a few minutes. Mr. Croly first, and Dr. Kidd afterwards, have set the excellent example of narrating their unsuccessful as well as their successful cases of ovariectomy. I, following their example, have to-night to announce the result of an unfavourable case of ovariectomy, which occurred in the Rotunda, on Tuesday last. The history of the case was as follows:—The patient was an unmarried woman, aged thirty-seven. Eleven years ago, after an attack of pleurisy, she noticed a swelling on her right side, which became very painful to the touch, and which, in time, extended across the whole of her abdomen. She came subsequently under the care of the late Dr. Duigan, of Mullingar, who wished, some

years ago, to perform ovariectomy, but his health failed, and he was prevented operating. She remained without treatment until her size became so great that she sought admission into the Rotunda, and she came under the care of Dr. Johnston last year. She then measured upwards of fifty inches at the umbilicus. Dr. Johnston tapped her, and drew off twenty-one quarts of fluid. The diagnosis then made was that of unilocular ovarian tumour. The cyst rapidly refilled, and her size became so excessive that she again sought admission, and expressed herself ready and willing to undergo any operation that promised a chance of relief and of the prolongation of life. It was quite evident, from the size of the tumour and the rapid rate at which it was increasing, that, unless something was done, she could not live long. Accordingly, after consultation with five or six of my medical friends, including former Masters of the Hospital, an operation was decided on, and it was performed last Tuesday. On opening the abdomen and exposing the cyst, we found universal but soft adhesions anteriorly. These were broken down without any difficulty whatever. Indeed, so far as the sound could reach, sweeping it round the enormous tumour, it seemed that no adhesion of any great density existed. The cyst was tapped and its contents very satisfactorily evacuated. I do not think that any portion of the contents of the cyst escaped into the pelvis. On drawing forward the tumour, however, I was disappointed to find that it was firmly adherent posteriorly, and the greatest difficulty was experienced in breaking down these adhesions. It was adherent to the omentum, to the transverse colon, and to some of the small intestines below. After considerable difficulty, however, these adhesions were broken down and the tumour drawn out. The pedicle proved to be very short. It was embraced in a clamp, in the usual manner; but, on account of its shortness, we decided on casting it into the abdomen. It was, first of all, seared with a red-hot iron, encircled with a catgut ligature, and thrown into the abdominal cavity. The operation, which lasted about an hour, was performed under the influence of ether and chloroform mixed. There was no vomiting. The incision having been closed the patient was placed in bed. The pulse was fairly good—about 80 at this time, and no symptoms of collapse were present. For the first six hours things went on tolerably satisfactorily. The pulse did not rise above 80, and there was no vomiting. Towards evening the pulse rose to 120, and her temperature to 101.6°. Up to this time she had taken nothing but milk and soda water, with ice or beef-tea in small quantities. In the course of the night stimulants were given, but she became gradually weaker. Sickness set in and increased so much that she rejected everything that she swallowed, and she gradually sank and died in about 32 hours after the operation. An autopsy was made next day by Dr. Harvey. On cutting the sutures we found that no union of the edges of the wound had taken place. The abdominal parietes in front

were very hæmorrhagic. The peritoneum was broken away in several places to a great extent, and there were a large number of ecchymosed spots on the inner surface of the abdominal wall. In some places, also, the peritoneum was greatly thickened—most so low down on the abdomen, which was, perhaps, the result of long-standing inflammation. Corresponding to the lips of the wound coils of the small intestines and the transverse colon were found firmly matted to the parietes. The omentum was thickened, highly vascular, rolled up together, and passing into a state of sphacelus. There was some bloody serum in the cavity of the abdomen. The uterus was small; the other viscera healthy. The cyst, which I now exhibit, was a large one of the unilocular type. The quantity of fluid withdrawn measured nineteen or twenty quarts. You see that not a drop of blood exuded from the pedicle. I believe that this patient died simply from collapse. There was no sign of inflammation whatever. I greatly regret the unfortunate issue of this case; but I believe that the operation was imperatively called for, and I do not think that any means were left untried to avert a fatal issue.

The adjourned discussion on Dr. Kidd's paper was resumed.

DR. DENHAM.—I rise with diffidence to offer some remarks on this most important subject. The question specially before us to-night is the propriety or impropriety of operating in cases where pregnancy exists. There are a great many other points of deep interest connected with the subject, which even two or three nights' discussion could hardly clear up. For my part, taking into consideration the effect of disease upon pregnant women in fever or pneumonia, and a variety of other cases in which abortion comes on during the prevalence of those diseases, I believe that those diseases complicate the question enormously, and that anything that predisposes to abortion in such cases is very much calculated to hasten the death of the patient. I consider that the shock given to the patient by the operation of ovariectomy, quite independent of its own results, is very much calculated to induce abortion; and I look on this, coming on after such an operation, as almost invariably fatal. I have had some small experience of ovarian cases connected with pregnancy. I had three of them during my mastership of the Rotunda Hospital, and all went on to complete termination, and the women gave birth to living children and recovered as if they had no ovarian tumours at all. Under these circumstances, I would be very slow in attempting to operate on a pregnant woman with an ovarian tumour. I would much prefer the chance of waiting until the result of the pregnancy was accomplished—until the woman had been delivered—and then to consider whether the woman should be operated on or not. The whole subject is so fraught with interest and with difficulty, that it is hard to know where to com-

mence. Mr. Spencer Wells, in his book, reports 114 cases of ovariectomy, out of which 38 deaths occurred. Of course it is very gratifying to any surgeon to have recoveries after so formidable an operation. On the other hand, when we calculate the length of time that these women might have lived—for in ovarian cases women may live for years and enjoy comparative health—I say that the question as to the propriety or impropriety of the operation, except in very urgent cases, is involved in difficulties. And when we see that, in the case lately submitted to us, everything seemed to favour the operation, the woman being young and tapped in comparatively good health, the first steps of the operation being admirably carried out and the adhesions in the anterior part of the tumour being found to be so trifling, and yet fearful adhesions being afterwards discovered behind, and a fatal result following, I think it is impossible to calculate in any given case what the result may be. Mr. Spencer Wells tells us that if he had separated the unfavourable cases in which he operated at the urgent request of the friends of the patients from the favourable cases, he would not have had a fatal case in the whole batch that he has reported. But everybody has seen cases of this operation in which the condition of the patient was apparently most favourable, in which there was not a single adhesion, and the life of the patient was comparatively young and healthy, in which the operation was performed with the most perfect accuracy, and which, nevertheless, proved to be more rapidly fatal than those in which there were numerous adhesions. It is, therefore, utterly impossible to predict that there will not be a fatal result in such cases. Of course there are great inducements to a man to operate when he is largely paid, and when the *éclat* of the operation sends his name over the world; and there are great inducements to him to bring prominently forward those cases in which he has been successful. I feel that the subject is one of deep importance, and that it is very difficult for us to discuss it with calmness. Mr. Baker Brown was perhaps one of the first operators in the world. He operated in 9 cases, of which 7 proved fatal, while only 2 recovered. He was shocked with the result, and he ceased to operate altogether. Mr. Bird, who is also an able surgeon, operated in 13 cases, and the mortality proved so great that he either ceased to record his cases or to operate altogether. Perhaps there may be something peculiar in the atmosphere of Ireland, but it is certain that Mr. Spencer Wells came over here on five different occasions, and operated in 5 cases, and that 4 of them died. I do not know whether or not there is anything in the atmosphere of this country different from that of England, but I know that the operations here have been anything but successful. I know I am rather digressing from the subject immediately under discussion, which is as to the advisability of operating in cases of pregnancy, but the question is of such deep importance that I trust I shall be excused for going into it at large.

DR. JOHNSTON.—I have not had much experience in ovariectomy, never having performed the operation myself, for in any of the cases that came under my observation, I certainly did not consider that I would be justified in operating. In the one which has been just described by Dr. Atthill, when she came under my care some seven months ago, I forget exactly the size she was, or how many quarts of fluid I drew off. But at the time we did not consider that we would be warranted in doing more than tapping, inasmuch as she was in good health, and not suffering any pain; and the only inconvenience she experienced being from her large size. We could distinctly diagnose that the cyst was a unilocular one. The result of the case proved that our decision was correct. I would, therefore, be very tenacious about operating in those cases, for, though the tumour may be free and perfectly movable in front, you never can know the extent or amount of adhesions that may exist posteriorly. With regard to an early operation, I do not consider it at all prudent or advisable that it should be done. I know a case now in which the lady is in good health, and yet it is nearly eighteen years since she first came under my notice. I had the late Dr. Johnson to see her, and he quaintly observed with regard to her case—"There is one remedy for her which, although not in the *Pharmacopœia*, is a most valuable one, and that is—*tincture of time*." It is fully seventeen years since he made that observation, and yet the lady is literally smaller now than she was then. I measured her some four months ago and found that she was 38 inches round, whereas she was 39½ inches eighteen years before. I should, therefore, be very slow in operating in these cases, unless the symptoms are of great urgency, the patient suffering extreme pain, and there is an immediate tendency to a fatal result.

DR. MACSWINEY.—It would be a matter of regret if the operation of ovariectomy were discredited by any discussion in this Society. Persons who, like myself, have had no experience from personal performance of the operation, but who only know the records found in the literature of the subject, cannot at all coincide in the opinion that the operation is one that should not be had recourse to. I think it should only be resorted to when, humanly speaking, there seems to be no chance of the woman surviving for any prolonged period, unless relieved of the tumour. I, therefore, venture to raise my voice against any attempt to discredit ovariectomy in suitable cases.

THE PRESIDENT.—Two questions have been raised in the discussion, one—which was the original question—as to the advisability of performing ovariectomy during pregnancy, and the other, the general one, as to the justifiability of ovariectomy at all. As to the first, I think it is one of the most difficult questions on which the obstetrical surgeon can be called

on to decide. It fell to my lot, within the last week, to have to decide on that question. The patient was sent up to me with a well-marked ovarian tumour. She was also, I believe, pregnant some eight or ten weeks. I say "I believe," for at that early period of pregnancy, and with a large ovarian tumour in front, it was utterly out of my power to decide positively whether she was pregnant or not. I believed, in that case, that it was my duty to wait and see what the effect of the pregnancy and the co-existing ovarian tumour would be; and, certainly, unless some grave symptom arises, I do not intend to interfere in this case. No doubt, the existence of such tumours may compel us either to tap or to have recourse to an operation, or to the induction of premature labour. What the future of the case, to which I allude, may be I cannot tell; but I think I ought to wait. While I would not hesitate, on the one hand, to perform ovariectomy on a pregnant woman, if the symptoms of the case demanded it, on the other hand, if it can be avoided, I believe it to be the wiser course to postpone it; and this is, I believe, Dr. Spencer Wells's opinion. With respect to Dr. Kidd's case, which formed the subject of his communication, now under discussion, it was a case which must have terminated fatally, if left alone; and I think that Dr. Kidd gave the patient the only possible chance of life by performing the operation. With respect to whether ovariectomy is justifiable or not, I thought the results obtained by Dr. Keith in Edinburgh, and Dr. Spencer Wells in London, had sufficiently decided that question in the affirmative. Dr. Spencer Wells's mortality did not exceed 20 per cent. in his last 100 cases; and Dr. Keith, out of his last 50 cases, had only 8 deaths. I do not believe that the air of Ireland has anything to say to the matter. In certain cases in which the operation has been unsuccessful in this country, I think that result was preventable. I have operated but three times, and I have had the good fortune to save two of the cases. One of the patients on whom I operated is now at home strong and well; and, in my opinion, she would have been dead within a few months if I had not operated, as she was rapidly wasting away. She is now in the enjoyment of most excellent health. The other woman was not in immediate danger of dying, nor was she wasting away, but the tumour was rapidly increasing, and if the operation had not been performed, I do not think she would have lived beyond a year or so. With respect to my last case, the particulars of which I have just detailed, I have no hesitation in saying that the operation was justifiable. The woman measured not much under two yards round the abdomen; she was quite unable to walk with any degree of comfort; her life was a burden to her; and, in addition to this distressing condition, the cyst was rapidly increasing in size. She had been tapped some months ago, and in the course of a short time the tumour was as large as ever, although twenty-one quarts of fluid had been removed. Supposing that no unforeseen accident

occurred, how long would that woman have lived, supposing that twenty quarts of fluid had had to be removed from her every few months? I have before me a record of Dr. Spencer Wells of 500 cases of tapping, in which the mortality was 25 per cent., which is greater than the mortality where ovariectomy has been performed. I do not think anything could be more discreditable to a medical man than the performance of an operation of this sort for the mere sake of *éclat*. I do not believe there is a single member of this Society who would operate for the mere sake of the *éclat* of the operation, and I regret that such a suggestion should have been made here. I was pressed twice to operate within the last two years, and I refused, because I believed that the cases were unsuitable; and I am sure that there is not a member present who would not have taken the same course. On the other hand, nothing has deterred or will deter me from performing the operation in a case where I believe I am called on to perform it, in order to give a chance of saving a life which must otherwise perish.

DR. DARBY.—I consulted my friend, Dr. Kidd, on two occasions where I had patients labouring under ovarian disease, and his advice, in both cases, was that the patients ought to be operated on, and the operation was performed accordingly, and they are both alive and well still. The question resolves itself, as in almost every other description of case, into one of sound diagnosis. In many cases lives have been saved by the operation. I have seen Dr. Kidd operate in very urgent cases, in which life could not have lasted long if the patients had been left alone, and those patients recovered. I think the same question that is being discussed now arises in the case of almost every other capital surgical operation. I have performed amputations pretty often; and there are cases of that sort which I would not touch, because I think it would be useless to do so. I believe that a similar discretion must be used in every other case. In cases of ovarian tumour it is not always possible to diagnose whether there are extensive adhesions or not; and I would ask Dr. Kidd whether, when a tumour is laid bare, and extensive adhesions are found that had not been anticipated, would he, in such a case, be content with tapping, or would he introduce a drainage tube?

DR. KIDD.—I must say I have been surprised by the remarks I have heard in reference to this operation of ovariectomy. I really think it is behind the age to discuss the question of the propriety of it. If there be any surgical operation the absolute duty and propriety of performing which may be proved to demonstration, I believe it to be ovariectomy. Mr. Wells in his book states that he was brought to see a patient by one of the most eminent physicians of London, who spoke about the risks of an operation, and asked him how could he dare to undertake it? His reply

was—"How could any man dare not to do it?" The average duration of life in cases of ovarian tumour is under two years; and death from that disease is of the most painful description. A few months ago I had to discharge the painful duty of watching from day to day a patient who was dying of ovarian disease. I must say it was the most painful case I ever attended. I never saw such suffering—such asking for help where no help could be given. It was a case in which no operation could be performed. Every day that I went there I attempted to withdraw from the case, it was so painful. I represented that my going to see her was useless; but every day I had to go to see this patient and to go away again without being able to do anything. I never witnessed such suffering, and, I must add, such patience, as there was in that case. I think there are very few surgeons at the present day who do not recognise the propriety of this operation. At the same time I quite concur with Dr. Denham and Dr. Johnston, that there are many cases in which it should not be attempted. I have myself frequently declined to perform it. I once declined to perform it in a case in which another Dublin surgeon afterwards operated successfully. In that case the woman told me that she had had the tumour for fourteen years. It was not a very large tumour at the time, and its rate of growth was not very great. Her health was not bad, and I strongly advised that there should be no operation. She left the hospital stating that she quite acquiesced in the advice she had got, and went home. I took accurate measurements of her case, and noted it carefully. She went to another hospital, and a few days afterwards I was present at the removal of the tumour. Now I must say that, in that case, the operation was a danger and a risk I would not recommend the patient to undergo. In many other cases I have advised patients not to undergo the operation where their health was not seriously injured by the tumour and the growth of the latter was not rapid. There are certain cases in which ovarian tumours may go on for a number of years without imperiling the patient's life, and in these the idea of an operation should not be entertained. But where I see a case in which the tumour is rapidly growing, and the woman's health suffering, and it is manifest that, unless removed, the tumour will run her into her grave within a few months, I do not hesitate to recommend an operation. It is an operation that I think should not be undertaken without the patient being made fully aware of the risk she is about to undergo. She herself must decide between the prospect of only a few months' life with attendant suffering and of a perfect recovery. For, it should be remembered, that the recovery in these cases is perfect. If a man's leg be removed for disease of the knee-joint, he is maimed for the rest of his life. But if the operation of removing an ovarian tumour be successfully performed on a woman, her recovery is perfect. She is afterwards, in every respect, in almost absolutely perfect health. She is capable of all the functions of

life. She may live as long as any other woman ; she may marry and have children, and enter into all the relations of life. This is a very important consideration. But the point I raised in my paper was as to the advisability of an operation where there was a ruptured cyst and pregnancy. Now, Dr. Denham has spoken of the risk of abortion coming on after the operation, and he has recommended that it should not be performed until after the termination of the pregnancy. We will all agree with Dr. Denham in that, if the case will admit of it. That is a point which I myself brought before this Society so long ago as 1870. If the case be one in which we may fairly think that the pregnancy may go on to a favourable termination, I believe it should not be touched. I read remarks made by Dr. Spencer Wells, in his book published since that discussion. You remember he remarked that, if the case be one of a unilocular cyst, which you may tap, ovariectomy is not justifiable. But if it be a multilocular cyst, the size of which you cannot reduce by tapping, the risk is very much greater ; and if, in addition, the multilocular cyst rupture, and the contents escape into the cavity of the peritoneum, the woman is likely to die in a few days, and otherwise her chance of life would not amount to more than a few weeks. Yet when we know that, in similar cases, the operation has been performed and the patients have lived, surely it is our duty to recommend the operation. I cannot doubt it at all. In the case of the poor lady which I have communicated, the risks of the operation were fairly put before her, and she elected at once to have the operation performed. It was merely risking a few weeks of life at the longest, as far as any human being could foresee, against the chance of perfect recovery.

DR. DENHAM.—Might I ask how many recoveries in similar cases have been recorded ?

DR. KIDD.—Dr. Wells has recorded six in his book. This is the first case in which death took place after the operation with pregnancy, and, what is more remarkable, the other patients went on to the full term of pregnancy after the operation. Dr. Wells told me since then that he had a case in the Samaritan Hospital in which abortion also took place. Dr. Johnston has spoken of cases running on for eighteen years, and has referred to cases of fibroids. Cases of ovarian disease that run on for eighteen years are exceedingly rare. Of course, we all know the history of Dame Mary Page, whose tombstone recorded the great number of times that she was tapped, and that so many quarts of fluid were drawn from her, but we do not meet with cases like that often. I believe that in very many of these cases of tumours of prolonged duration there has been an error in the diagnosis. I do not at all say that such was the fact in Dr. Johnston's case, but it is very doubtful to me whether many of those instances were not cases of fibroid tumours. But that does

affect the case of ovarian tumours. The President has mentioned a case in which the pregnancy was of eight or ten weeks' duration. I can scarcely imagine the question of an operation for ovariectomy arising in that case unless the ovarian tumour was in a condition requiring an operation. If the case is one of pregnancy for such a period, and that the ovarian tumour did not require an operation, I do not think we should consider it. In such a case I should prefer the chance of inducing abortion to attempting an operation. The object of my paper, in 1870, was to show that in a great many cases pregnancy may run on perfectly safely and well to the full term, notwithstanding the presence of an ovarian tumour; and it was drawn forth by observations such as those made by Dr. Barnes, to the effect that it is impossible for an ovarian tumour and a pregnant uterus to co-exist. That I do not believe. In conclusion, I must say Dr. Denham's statistics are quite out of date. Mr. Wells has recorded 500 cases of operations in his last book, of whom 373 recovered, and since that was published has, I believe, operated on some 300 more with still greater success; and though Mr. Baker Brown was obliged, by accidental circumstances, to cease operating for a time, after his ninth case, he resumed the practice and operated on 112 cases, or a total of 121, with a result of 86 recoveries to 35 deaths.

DR. MORE MADDEN having taken the Chair,

DR. ATTHILL said :—This specimen is a polypus, taken from a patient who was admitted into the Rotunda Hospital a few months ago, suffering from menorrhagia. She was a married woman, aged thirty-eight, who had never been pregnant. She enjoyed good health until four years ago, when, for the first time, menstruation became profuse—the flow gradually increasing until, at last, it became almost continuous. She was, on admission, extremely anæmic and blanched. She also suffered from constant vomiting and very severe pain in the abdomen. On examination, I found the uterus to be very large—evidently, it contained a tumour of considerable size. The question arose whether it was a polypus or a fibrous tumour. In consequence of her extreme prostration, I decided against resorting to surgical interference for a time, and to rely on subcutaneous injections of ergotine. We injected five drops of the extractum ergotæ liquidum with ten of water on the 10th, and on the 14th repeated the injection. The result was that the flow was checked and did not return for twenty-four days. The intervals had never, for a long time, been more than sixteen days—frequently much less. Her strength having somewhat improved, I explored the uterus. The sound penetrated to an extent of five inches, and, as I was satisfied of the existence of some form of intra-uterine tumour, I proceeded to dilate the uterus, inserting, for this purpose, five pieces of sea-tangle. On withdrawing

these, I detected a large tumour, which filled the entire of the uterus. The os internum was not, however, sufficiently dilated to enable me to remove a large a tumour, and the woman being so anæmic that I thought it better to postpone further treatment until her condition improved. I, therefore, allowed her to return home—the result of the treatment so far being that the menstrual discharge was much lessened in quantity, though it was still profuse. Her anæmic condition, however, continued. She was re-admitted on the 20th of May, and on the 29th I introduced seven pieces of sea-tangle into the os uteri. On the 30th, having placed the patient under chloroform, and having removed the sea-tangle, was enabled to pass my finger into the uterus and to carry a strong steel wire, attached to an ecraseur, over the anterior surface of the tumour, and I succeeded in removing a portion of it. This gave me more room, and enabled me to carry the wire of the ecraseur up to the very fundus. On proceeding, however, to tighten the wire, the mass encircled was so large that the ecraseur began to bend, and I feared the instrument would break. I, therefore, resolved to suspend further proceedings for a time, and to leave the instrument *in situ* till the vitality of the tumour should be impaired by the strangulation to which it was subjected. The result coincided with my anticipations; and, next morning, I succeeded in removing this large tumour, which is as big as a man's fist. I felt satisfied that there was still a portion left behind. The woman was, however, so exhausted that I did not prolong the operation, which had already lasted twenty-four hours. The result was that, two days afterwards, she expelled this small portion of the tumour, which is the size of a walnut. She has since steadily improved. It is the largest *intra-uterine* polypus I ever removed. Its consistence is not dense, but its size is so great that, on constricting it, the resistance offered to the wire was enormous.

DR. DARBY.—Was there any sloughing after the injection of ergotine?

THE PRESIDENT.—None whatever. In a case at present in the hospital we have injected it sixty times, at intervals of two days, and no unpleasant consequences have followed, but then we have not cured the patient.

The Society then adjourned.

THIRTY-NINTH ANNUAL SESSION.

LOMBE ATTHILL, M.D., President.

J. RUTHERFORD KIRKPATRICK, M.B., Hon. Secretary.

Saturday, 18th November, 1876.

The PRESIDENT in the Chair.

The PRESIDENT delivered the following Inaugural Address:—

It has been the good fortune of my predecessors in this chair, and indeed my own also, when, at the commencement of the last session I had the honour of addressing you, to be able to congratulate you on the flourishing condition of the Society, and of the comparatively few gaps made by death in our ranks. This year, it is with regret that I must speak in other terms. The report is not as cheering as it should be. I trust it will be otherwise for the future, and that when next we meet our financial position will be greatly improved. That, after all, is a matter easily rectified by the exercise of a little care and attention; but it will be long ere the loss we have sustained by the removal from among us of so many valued members can be made good. The obituary list includes, amongst those of others whom we deplore, the names of John Ringland, one of the founders and ex-Presidents of the Society, and of Henry Sibthorpe, for so many years our valued and efficient Treasurer—two members universally respected and esteemed by us all.

Dr. Ringland, if not a frequent contributor, was a regular attendant at our meetings, and took a prominent part in our debates, the value of which were materially enhanced by his sound practical remarks. At the time of his death Dr. Ringland held a high position both in this Society and in his profession, having, after a long and arduous struggle against the difficulties which always beset the young practitioner, at length attained well-merited eminence and success. Educated in the University of Dublin, he graduated in arts and medicine in the year 1839. A little later he was admitted a licentiate of the College of Physicians, and in due course was elected a fellow of the College of which, at the time of his death, he was also a censor. From the commencement of his career Dr. Ringland devoted himself to the practice of midwifery. As early as the year 1841, just two years after he had graduated in medicine, he was elected one of the masters of the Coombe Lying-in Hospital, of which institution, on the death of Dr. Sawyer in 1875, he became sole master. There he worked steadily and assiduously, and by his exertions greatly added to the reputation of the hospital.

Subsequently he became Lecturer on Midwifery in the Ledwich School of Medicine, a post he filled with great success, for he was an eloquent speaker and able teacher, and though he did not write much he aided in no small degree to the advancement of midwifery and gynecology; and it deserves to be specially recorded that it was on his recommendation and suggestion that the strong nitric acid was first applied to the interior of the uterus, a treatment now almost universally adopted by Irish and American gynecologists in severe cases of uterine disease. Of his private and professional character I feel that it is needless for me to speak to you who knew him so well; kind, courteous, and hospitable, he was esteemed alike by his professional brethren and the public. He gained the entire confidence of the former by his upright, honourable conduct; and of his patients, by his kindness, attention, and skill; of enemies, I believe he had none, while his friends were everywhere. Personally I deeply regret his loss, and I do not believe there is one here tonight who does not join with me in expressing our sorrow at his death, and our sympathy with his bereaved family.

Dr. Henry Sibthorpe was a very different man, eminently retiring and unobtrusive; he never took a prominent part in our proceedings, still, though a silent member, he was a valued and useful one. For years he acted as our Treasurer, and discharged the troublesome duties of that office with tact and the greatest exactitude. Subsequently he was elected Vice-President of the Society, and to the last was a regular attendant at our meetings.

From this painful subject I turn to the Transactions of the Society.

The papers contributed by members of the Society were, during the past session, of the most varied character. I can refer to but one or two. Dr. Johnston read before the Society the Clinical Report of the Rotunda Hospital for the seventh year of his Mastership. These Reports, the value of which, as clinical records, can hardly be overestimated, open up questions of the greatest importance. Prominent among these is the advisability, or otherwise, of the use of the forceps in cases in which the os uteri is but partially dilated. Dr. Johnston's Reports clearly prove that such a practice is, under certain circumstances, not only justifiable, but judicious; but that the practice is liable to be carried to a dangerous length is as clearly proved by a paper subsequently read before the Society, "On the Use of the Forceps in *Undilatable Os Uteri*," from the pen of Dr. Maguire; and I think no doubt can exist but that the tendency at present is to carry the use of instruments in cases of natural labour to an unwise extent. It is a matter of congratulation that the importance of a thorough knowledge of midwifery is now becoming more clearly recognised by students, and that, consequently, there is less danger than formerly of malpractice in this department of medicine. Still, that such is far from being of infrequent

occurrence is proved, on the one hand, by the occasional improper or injudicious use of instruments; and, on the other, by the fact that vesico-vaginal fistula is still frequently met with—a lesion entirely preventable, and always the result of neglect or want of skill on the part of the attendant. Six cases of vesico-vaginal fistula have come under my observation within the past year. I trust such a large number is not a true index of the state of obstetric practice throughout Ireland.

Dr. Macan's communication "On the Hypodermic Injection of Ether," opens up a subject of great importance. It not only goes to confirm the view enunciated by Professor V. Hecker, of Munich, as to the possibility of arousing flagging nature in cases of extreme exhaustion by the hypodermic injection of this stimulant, but still further to suggest whether, in the practice of midwifery, where it is so often necessary to use remedies with the greatest promptitude, if the hypodermic injection of these should not be had recourse to in preference to any other method. For myself, I unhesitatingly advocate this practice; it seems to me specially to hold good with respect to administration of ergot of rye in cases of *post partum* hæmorrhage. Here the routine practice of administering ergot by the mouth is, in general, useless. It is seldom, indeed, in these cases that the digestive functions are sufficiently active to assimilate the contents of the stomach. I believe as a rule, that anything then ingested either remains undigested in the stomach, or is rejected by vomiting. This latter is, fortunately, very common. Were it not so many patients would suffer, and that seriously, from the enormous quantity of stimulants poured in with unthinking readiness by friends and attendants. Vomiting, has, indeed, I am satisfied, saved many lives, threatened with extinction, not more by hæmorrhage than from the effects of supposed remedies poured into the stomach, and which actually tend to depress still more the vital powers already exhausted by loss of blood. A new era in therapeutics has been inaugurated by the hypodermic administration of drugs; to what extent this method can with advantage be carried is still unknown; but that it is eminently advantageous in obstetrics cannot be doubted. I have already alluded to the value of ether so employed, and to the advantage to be gained by administering ergot in this manner; the same holds good, in even a greater degree, with reference to opium. The value of opium in the treatment of puerperal disease can hardly be over-estimated, its value being in a direct ratio to the rapidity with which its narcotic effects can be produced and the exactitude of the dose administered; by no other method can these results be in an equal degree obtained, as by the hypodermic injection of morphia. In a case of puerperal peritonitis, for instance, the alleviation of pain is all-important, but opium administered as an anodyne draught will frequently be vomited, while if administered as a pill it may pass through the intestines undissolved, or several pills

taken at intervals may remain for hours in the stomach inert, to be simultaneously digested and absorbed, and so produce the usual effects of an overdose; while, if suppositories be employed, the diarrhoea, which is so frequent an accompaniment of the disease, may prevent their being used efficiently.

While on the subject of the hypodermic administration of opium, I do not think it is out of place for me to protest strongly against the abuse of the drug administered in this manner, in the form of the solution of morphia; the rapidity of its effects, and its efficiency as a pain-destroyer when thus used, are so great, that sufferers naturally crave for a repetition of the injection, or, as they *innocently* term it, for "the needle;" the results are most baneful. In a case recently under my care for a troublesome but by no means an incurable form of uterine disease, I was horrified to discover that the patient, a young woman of about twenty-six, was in the habit of inducing her medical attendant to inject half a grain of morphia some four or five times a day. This baneful habit had been going on for months ere I discovered it. It is needless to say that health had failed, appetite there was none, and that premature age was stamped on her brow. I believe this lady's case to be an example of a numerous class; and it and others which have come under my observation have decided me to observe a rule, which I enforce in hospital no less than in private practice, viz., to refuse to administer morphia hypodermically in cases of chronic disease, except in the advanced stage of cancer, or of some equally painful and incurable affection. And I would urge on hospital physicians and surgeons the necessity of forbidding, or at least cautioning, their clinical clerks not to yield to the importunity of patients, who, ignorant of the evils it engenders, or careless of the future, provided relief from present suffering be obtained, commence a habit as seductive and leading to as lamentable results as does dram-drinking. In puerperal peritonitis, and in some other acute and painful diseases, the hypodermic injection of morphia is so superior in efficacy, in rapidity of action, and, above all, in the exactitude of the dose administered, to any other method of administering opium, that it is not alone right for us to practice it, but it would be culpable on our part to omit doing so; but its evident value in such cases is no excuse for our using, or permitting its use in others. Ere it is too late, I trust that not alone the members of this Society, but of the profession at large, will join in putting a stop to a practice, the baneful influence of which it is hardly possible to estimate.

But in many cases of uterine disease pain may be alleviated by other means than the exhibition of opium in any form. It is now some years since I pointed out the great benefit to be obtained in some of the forms of uterine disease from the use of Chapman's spinal hot-water bags, and experience, far from lessening, has confirmed me in the opinion I then expressed; and I confess I am surprised to find this eminently safe and

simple treatment to be so little appreciated. Many patients have assured me that the relief from pain afforded by the use of these bags was very great. Of course they are only suitable to the treatment of certain forms of chronic uterine disease; but, after all, these are the very cases we are most frequently called on to treat.

Of new agents, iodoform is one the value of which has not as yet been fully tested. I have tried it in the shape of crayons, introduced into the uterus by means of a *ports caustique*, as recommended in case of dysmenorrhœa, but without producing any beneficial effects, but it is otherwise when the drug is used *per anum* in the form of a suppository. Iodoform so employed, in four or five grain doses, has, in many cases which have come under my observation, produced excellent effects, allaying spasm and relieving pain. The conclusion I have arrived at with respect to iodoform is this, that it only relieves pain when that pain is due to some form of muscular spasm; thus, in cases of intra-mural fibroids, in which the pain is of a paroxysmal character, suppositories of iodoform are of decided use. Again, in cases in which pain may be referable to disease of the Fallopian tubes, the same holds good; but when inflammation is present, iodoform fails to give relief. A case which lately came under my observation affords an admirable illustration of the value of this drug, while it proves what I have long believed, that remedies administered *per vaginam* are inert.

In August last I was consulted by a lady under the following circumstances:—Married some years ago, she had suffered subsequent to abortion from an attack of pelvic cellulitis, which terminated in the formation of an abscess; this discharged *per vaginam*. Of late menstruation had been somewhat irregular, but as her health had been fairly good, she did not consider this as of importance. During the early months of the year, however, it recurred monthly. At this time her husband was abroad; he rejoined her in the month of May, and in June menstruation did not recur. In July she was suddenly seized with intense pain, referred to the iliac regions, and shooting down the inside of the thigh; at the same time she became "unwell," and, as she believed, menstruated regularly. The pain subsided, but after the lapse of two weeks the same phenomena recurred. On the cessation of the flow she applied to me. At the time I saw her she was free from pain, but each night the paroxysms recurred, and were of the most excruciating character. A vaginal examination detected a fulness in the right iliac fossa, and the diagnosis of pelvic hæmatocele was made, accompanied, probably, by spasmodic action of the Fallopian tube. In addition to other treatment, such as warm hip baths, &c., I prescribed the use of iodoform suppositories. On visiting this lady next day, I learned with regret that my treatment had produced no results, and that the previous night had been one of intense suffering. I, therefore, prescribed chloral in large doses, but

subsequently discovering that she had introduced the suppositories into the vagina and not into the rectum, as I had ordered, advised, while leaving directions for the administration of the chloral should it be needed, that an iodoform suppository should be introduced into the rectum on the first symptom of the recurrence of the pain. On the following day I had the pleasure of seeing my patient apparently well; all pain was gone. She had used the iodoform suppositories as directed, and within half an hour had procured perfect relief from her sufferings. I noticed another remarkable fact at the same time. On every visit I had been in the habit of making a vaginal examination. On the previous day, that following the night on which two suppositories, each containing five grains of iodoform, had been introduced into the vagina without producing any effect, not the slightest smell of iodine was perceptible about the patient, or on my finger after its withdrawal from the vagina; but on the second day, when one suppository only had been introduced into the rectum, the odour of the iodine was quite evident about the patient, while so strongly were the vaginal secretions impregnated with it, that my finger retained the smell after repeated washing for nearly twelve hours. I do not think a stronger proof could be afforded than this of the relative effects produced by drugs introduced into the vagina and rectum respectively—how inert in the one, how energetic in the other case. I believe vaginal suppositories of all descriptions to be nearly useless, and have, for a long time past, ceased to prescribe them.

I take this opportunity of drawing the attention of the Society to what I believe to be a valuable improvement in the treatment by surgical means of some forms of cancer of the uterus. In many cases of this disease, perhaps, indeed in the majority of those which come under our observation, little or nothing can be done for the poor patient. Where the disease has already extended to the adjoining tissues, and that the uterus has become fixed, it is evident that no advantage can be hoped for from surgical interference. But in other cases where the disease has been detected earlier, an operation offers by far the best prospect of prolonging, possibly of saving, the patient's life.

The only operation hitherto practised in this country has been amputation of the cervix uteri, an operation easily enough performed, followed, however, by but very partial success. But at the last meeting of the British Medical Association held in Sheffield, Dr. Marion Sims, of New York, drew attention to a new and bold operation which he had practised with satisfactory results—namely, the following up of the disease into the uterus, and by a careful dissection, removing from within the cervix, and even from within the body of the uterus itself, every portion of the unhealthy tissue, not alone that which is soft and friable, but also the subjacent structure which is hard and cartilaginous.

I need not occupy your time by pointing out how very different thⁱ

operation is from that previously practised by us. I was so deeply impressed by the statements made by Dr. Marion Sims, and by the views advocated by him, that I determined to test for myself the value of the operation. The opportunity of doing so unfortunately presented itself only too soon. I have already twice fairly carried out all the details of the operation. I have proved this much, that you may dissect right up into the cavity of the uterus with safety, and that it is possible to remove, apparently at least, every particle of the disease, but it does not follow that even by this bold operation you have saved your patient; many months must elapse before that can be pronounced to be so, and it is but fair to Dr. Sims to add that he only advocates it as being safe in execution, and as holding out the best chance to the patient, if not of cure, at least of prolongation of life.

My patients have been wonderfully benefited, to what extent time alone can prove, but the exhausting hæmorrhage has ceased, the pain is gone, and strength is returning. Nevertheless I fear as I have warned their friends, all this may last but for a time. One point in favour of the operation is this, that if carefully executed it is a safer one than that of amputating the cervix, for, with the aid of the duck-bill speculum, you can expose the parts and see exactly what you are doing, whereas, when using the ecraseur for the amputation of the cervix in cases where the vagina is filled up with a cancerous mass, you are obliged to trust altogether to the sense of touch, and even that, to but a partial extent, for frequently it is impossible to reach with the finger the healthy tissue. The result may be, as occurred in a case on which I operated myself, that in the effort to remove the whole of the disease-mass, a fold of the vaginal wall became included in the loop of the wire of the ecraseur, and the cavity of the perineum opened. For myself, I certainly advocate the operation introduced by Dr. Marion Sims.

I could easily, gentlemen, lengthen this address by reference to many subjects of interest and importance at present being brought under consideration by workers and thinkers at home and abroad, but I think I have said sufficient to show that the past year was not a barren one, and at the same time, that much lies before us to accomplish.

In conclusion, I desire to thank you for the honour you have done in twice placing me in this chair, and, on relinquishing it, trust that under the auspices of my successor the coming session will show good results, and that the Dublin Obstetrical Society will long continue to prosper.

CLINICAL RECORDS.

Select Clinical Reports. By RICHARD RYAN, M.D.; Medical Officer, Bailyborough Workhouse; and Consulting Sanitary Officer, Bailyborough Rural Sanitary Authority.

THE high mortality in croup, and the uncertainty attending the various methods of treatment are so well known, that the following cases will, I believe, interest many readers.

Previous to the two that I am about to record I had noted six cases of croup, in which the symptoms and signs were so plainly marked that the diagnosis was obvious, and of these four died—an unfavourable record, but it does not include any doubtful case, and those that ended fatally were seen at advanced stages of the disease, when the vital powers were beginning to fail. The two that recovered were seen earlier in the disease, and the constitutional symptoms were not at any time of extreme urgency.

Painfully impressed with the inefficiency of medical means I determined to perform tracheotomy in future in suitable cases, and to do this before the patient would be worn out by fever, dyspnœa and want of rest, or attacked by any pulmonary complication. Believing that instead of deferring the operation until the child was partially suffocated, it ought to be performed in all cases in which the disease had fully developed itself, and just as the deficient aeration was beginning to manifest its effects on the circulatory and nervous systems.

CASE I.—*Croup; Tracheotomy on the third day; Recovery.*—A.B., a healthy, well-nourished boy, aged three years, was presented for examination at 10 o'clock, p.m., on the 25th of September last, having been brought from the country, a distance of five miles. During the past week he suffered from a hoarse cough, which was attributed to cold, and considered of no importance, as he was allowed to run about as usual in the open air. His mother volunteered the statement that during the first few days of the cough she saw a *white scum* in the back of his throat. When going to bed on the night of the 23rd he was pretty well, but awakened about 1 o'clock a.m. with a hoarse paroxysmal cough and dyspnœa, which made his mother fear he would be suffocated. On the 24th he was much easier, but at night the paroxysms of cough and dyspnœa became alarmingly urgent, so that, fearing he would not live another night, his mother brought him to me. On examination his face,

rather pale and bedewed with sweat, presented an appearance of distress; pulse, 126; cough, hoarse, not loud, and ineffectual; expiration and inspiration impeded; the abdomen, supra-clavicular and supra-sternal regions, being pressed in toward the cavity of the chest, while the nostrils worked as he strove in vain to inflate his lungs. He was hot and restless, and spoke in a low husky voice.

Ordered, twenty grains of sulphate of copper dissolved in two ounces of water, a teaspoonful to be taken every five minutes until free vomiting is produced. Two leeches to larynx, followed by hot fomentations and poultices, a calomel purge, steam inhalations repeatedly during the night. At my suggestion she took lodgings in the town, so that I could operate if necessary.

Sept. 26th, 9 30 a.m.—The leech-bites bled pretty freely; bowels moved, and emetic brought up some shreds of lymph matter, after which the respiration was easier; pulse, 126; dyspnoea, cough, and constitutional symptoms are unchanged. His chest was everywhere resonant, and, judging by the character of the cough and the results of auscultation, I concluded that the obstruction to respiration existed solely in the larynx or upper portion of the trachea. Believing that without operative interference the child must die, and that tracheotomy held out a reasonable prospect of recovery, I asked and obtained the parents' consent to perform that operation. 10 30 a.m.—Assisted by Dr. Robinson I proceeded to operate, having previously put our little patient under chloroform, though it did not prevent him from struggling a good deal. Placing him in the usual position I pressed the fingers and thumb of my left hand close down on either side of the trachea in order to make it bulge forward, and to keep the great vessels of the neck out of danger; then, not attempting minute dissection, I divided the skin and subcutaneous cellular tissue with one incision; a second and third laid bare the trachea immediately below the larynx. After the second incision, a vein bleeding freely, we secured it, but in the last incision some veins were divided and blood gushed up from the bottom of the wound in alarming quantity. At this time the child began to struggle violently, thereby distending the cervical veins and increasing the hæmorrhage. We could not catch up the bleeding vessels to ligature them, and though digital pressure arrested the hæmorrhage it increased the dyspnoea and struggling. Blood still flowing freely, I determined to complete the operation as rapidly as possible, hoping that as the hæmorrhage was altogether venous, it would cease when the respiratory acts were freed. Holding the trachea, drawn forward by means of a tenaculum inserted in the trachea, a little to the left of the mesian line, I opened it from below upwards for about three quarters of an inch, dividing the uppermost rings of the trachea; with a sucking noise air rushed in and also some blood. The struggles and the flow of blood ceased immediately, except a slight oozing, which the

application of a solution of the perchloride of iron effectually restrained. I sucked the blood out of the trachea with my lips as well as I could, and the child lay so quiet after, that one could hardly observe the movements of respiration. The inner surface of the trachea was vascular and swollen, but there was no appearance of false membrane. Still holding the trachea fixed with the tenaculum, I introduced with some difficulty Fuller's bivalve tracheotomy tube; then, withdrawing the tenaculum, I brought the edges of the wound together with adhesive plaster, and put the child to bed, with a warm jar to his feet. The usual precautions to insure a warm moist atmosphere by means of sheets hung around his bed, and the steam of hot water kept constantly escaping near him, were rigidly enforced from this time until the case was completely well. He now fell into an easy sleep, his respiration so quiet as to be inaudible at the distance of a few inches from the tube. 11 30 a.m.—Pulse, 120; has slept an hour and taken some drink since he awoke; he is now apparently free from any pain or uneasiness, playing with anything he can reach. The change from his former state is so conspicuous that his father, who very reluctantly allowed me to operate, says, "It is such relief to him that I am glad now the operation is performed, even if he died to-morrow." 9 30 p.m.—Bled a teaspoonful when taking out the inner tube to clean it; put on a flannel night-dress.

27th, 9 a.m.—I found him half suffocated for want of cleaning the inner tube, the father not liking to remove it as the child struggled when it was replacing. He slept nearly all the night. Pulse, 126. I gave him some bread and milk, which he took greedily. 4 30 p.m.—Took part of a boiled egg, underdone, for dinner. Had a very copious and foetid discharge from the bowels.

28th, 9 30 a.m.—Spent a good night; slept well; took bread, milk, and egg for breakfast. Pulse, 124. Withdrew the metallic tube which I had employed since the operation, and introduced Arnold's light double ebonite tube instead, as I judged it would be easier to wear. 6 30 p.m.—Sent for, as he coughed up the tube, the neck-string being too loose; I reintroduced it without any trouble, and secured it. He cannot breathe at all through his larynx; grinds his teeth during sleep.

29th, 10 a.m.—Slept nearly all night; pulse, 120. Took out the tubes and applied a weak solution of sulphate of copper to the edges of the wound and the adjacent inner surface of the larynx and trachea. 9 30 p.m.—A good day; pulse, 118. On removing the inner and stopping the external opening of the outer tube he can breathe a little through the larynx and speak faintly; coughs up a viscid mucus; bowels not moved since the 27th; ordered a calomel and rhubarb purge.

30th, 10 a.m.—A good night; pulse, 115. I allowed him to be removed home to-day by car five miles. During the journey a quart bottle of hot water, wrapped in flannel, was held uncorked close under the

neck, and cold air excluded by plenty of muffling. I directed the precautions to secure a moist warm atmosphere to be continued, and the father, who had acquired considerable handiness in managing the case, was to keep the inner tube cleaned as required.

October 1st.—He bore yesterday's journey well ; pulse, 122 ; bowels regular ; applied solution of nitrate of silver, ten grains to the ounce, to the wound and inside of adjacent parts of larynx and trachea. This caused a very severe attack of spasmodic cough.

2nd.—Pulse, 120 ; last night was the best since he became unwell ; applied solution of nitrate of silver as before ; spasmodic cough very violent again.

5th.—Pulse, 120 ; takes his food as in perfect health.

6th.—His father informs me he is coughing more than usual, so I send him a sedative cough mixture.

8th.—Pulse, 124 ; very thirsty and perspiring a good deal ; appetite not so good. He has a frequent irritative cough for past two days, with viscid rust-coloured sputum occasionally. An examination of his chest did not reveal anything abnormal. Believing that the cough and rusty sputum were due to irritation of the trachea by the tube, I determined to remove it. Up to the present he could not suffer the external opening of the outer tube to be closed, except for a few seconds, during which air could be heard making its way through the larynx with stridor, but when both tubes were removed he used to breathe freely through the tracheal opening. Now when the tubes were removed the wound was healed, except an aperture about the size of a crow's quill ; through this aperture he expired, inspiration being carried on mainly, if not entirely, through the larynx.

9th.—Scarcely any air passes through the wound ; cough and thirst very much less ; no sputum ; talks freely. The granulations in the wound to be touched daily with the solution of nitrate of silver ; voice a little hoarse.

11th.—The wound is quite closed.

28th.—Saw him to-day ; his voice is scarcely perceptibly hoarse, and he looks quite well in every respect. I have ordered a little cod-liver oil to be taken daily for a month.

The operation calls for but few remarks. The only real trouble I had was the hæmorrhage, which I feared at one time would prove fatal before I could finish the operation. I found great benefit in using the tenaculum, as I was able to draw the trachea forward and prevent a good deal more blood from entering the opening I had made. The traction which I thus made on one side of the wound kept its edges asunder for the free passage of air, and enabled me to introduce the tracheotomy tube with less difficulty than I could otherwise. The after-treatment consisted in securing a warm moist atmosphere, attending to the bowels, and giving as much

of bread, butter, and new-milk as he would take. On searching the Irish medical papers for past two years, I can find only four cases of this operation, and all terminated fatally, the operation being generally performed too late, when the operators hardly expected to give more than temporary relief. In conclusion, those who believe that diphtheria and croup are the same, would blame my foolhardiness in sucking out the blood that had entered the trachea; however, I believe that these diseases are essentially different, and, at all events, I had no other means by which to relieve my patient.

CASE II. — Croup treated from its Earliest Stage Medicinally; Recovery.—At 11 o'clock a.m., on the 26th, the day that I operated on the last case, his sister, a fine healthy little girl about fifteen months' old, was brought to me by the mother, who said she had the same complaint as the little boy.

On examination I could not find any of the distinctive signs or symptoms of croup. She looked fretted and sick; skin, hot; pulse, 120, but respiration perfectly free; no cough for nearly half an hour that she was in my presence, and no appearance of false membrane in fauces. I believed the child had a mere cold, probably brought on by neglect, as the father and mother were both in town with her little brother, and I gave that opinion. I had previously remarked that cases of ordinary catarrh, arising in families in which there was croup, at the time or immediately before, were incorrectly regarded as croup, whilst I had never met two cases of croup in the same family at one time; and thus the mother's statement rather prejudiced me in favour of a simple cold. Ordered nauseating doses of antimonial wine.

3 o'clock p.m.—Whilst examining the little boy I was disagreeably surprised to hear a well-marked fit of croupy cough from the little girl. When she ceased to cough her respiration was free. Ordered a calomel purge, which acted well, hot fomentations to neck, and to be kept in the same apartment and subject to the same warm, moist atmosphere as her brother.—9 p.m. Frequent, loud, hoarse cough, with wheezy respiration. Ordered a leech to larynx, to be followed by hot fomentations and poultices.

27th, 9 30 a.m.—Coughed up about a square inch of false membrane; cough looser, and not so brassy. Ordered to continue hot fomentations and poultices, and to get three grains of carbonate of potash, and ten minims of syrup of squills in mixture, every two hours. 9 30 p.m.—Pulse, 160. The impediment to inspiration is well marked, but expiration is comparatively free. Coughed up more of the membrane, followed by a short period of relief. Ordered sulphate of copper emetic, same as in last case. Applied the liquor epispasticus on the front of her neck, from the hyoid bone to the top of the sternum, and to continue the hot poultices.

28th, 9 30 a.m.—Pulse, 165. Had a very bad night, except when the vomit brought up some of the croup membrane, after which she usually got an hour of comparative quiet. Some pieces of the false membrane, which were kept for my inspection, showed a distinctly fibrillated structure. Inspiration and expiration both obstructed. Presents a heavy, drowsy appearance. Conjunctivæ injected. Ordered to discontinue the last mixture, and take one containing carbonate of ammonia, chloric ether, and syrup of squills instead. 9 30 p.m.—Respiration easier all day.

29th, 10 30 a.m.—Pulse, 140; slept nearly all night; respiration much less embarrassed; anxious for food. 9 30 p.m.—Pulse, 150; hot and very restless; her breathing became very difficult in the afternoon, but was relieved by the emetic bringing away shreds of false membrane; bowels confined. Ordered a calomel purge, to continue the mixture, and repeat the emetic, as the dyspnœa requires it.

30th.—Bowels regular; a fair night; took emetic only once; the croupy cough continues, but the breathing is free; repeated the mixture, and the emetic to be taken when the respiration became laboured; allowed her to go home to-day, adopting the bottle of hot water, and other precautions, to prevent cold, as in her brother's case.

October 1st.—Pulse, 140; spent a bad night; had to get the emetic twice; noisy respiration.

2nd.—Pulse, 144; spent a hot, restless, night; got emetic twice; respiration wheezy, and slightly impeded.

5th.—Got the emetic every night since, and some nights twice; it always gives relief.

6th.—Father reports that she is getting on well.

8th.—Pulse, 130; she appears well, but the croupy cough and hoarse voice continue; she is hoarser to-day than yesterday.

9th.—Very severe dyspnœa set in last night, which greatly alarmed her mother, as there was no more of the emetic; fortunately, in one of the paroxysms, vomiting came, with discharge of thick glairy mucus, this gave immediate relief, and she slept uninterruptedly for six hours. From this time forward she improved, though an occasional hoarse cough continued for a couple of weeks.

28th.—Saw her to-day, and she is quite well.

I attribute recovery in this case to the fact that I saw the child at a stage of the disease in which the doctor is seldom consulted, and that emetics were given every time they were indicated by the obstructed respiration.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.R.Q.C.P.

VITAL STATISTICS

Of Eight Large Towns in Ireland, for Four Weeks ending Saturday, November 4, 1876.

| Towns | Population in 1871 | Births Registered | Deaths Registered | DEATHS FROM ZYMOTIC DISEASES | | | | | | | Annual Rate of Mortality per 1,000 Inhabitants |
|--------------|--------------------------|----------------------|----------------------|------------------------------|---------|------------------|------------|-------------------|-------|-----------|---|
| | | | | Small-pox | Measles | Scarlet Fever | Diphtheria | Whooping Cough | Fever | Diarrhoea | |
| Dublin, - | 314,666 | 633 | 445 | — | 7 | 12 | 6 | 7 | 20 | 17 | 18·4 |
| Belfast, - | 182,082 | 456 | 284 | — | 1 | 8 | 1 | 17 | 15 | 14 | 20·2 |
| Cork, - | 91,965 | 216 | 146 | — | 1 | 3 | — | — | 4 | 6 | 20·8 |
| Limerick, - | 44,209 | 69 | 64 | — | — | 1 | — | — | 3 | 4 | 19·0 |
| Derry, - | 30,884 | 52 | 20 | — | — | — | — | 1 | — | — | 8·3 |
| Waterford, - | 30,626 | 51 | 31 | — | — | — | — | — | — | — | 13·0 |
| Galway, - | 19,692 | 26 | 26 | — | — | — | — | — | — | — | 17·3 |
| Sligo, - | 17,285 | 32 | 21 | — | — | — | — | — | — | 2 | 15·8 |

Remarks.

An unusually low rate of mortality prevailed in all the towns during this period. In London it was 19·8 per 1,000 of the population annually; in Edinburgh 14·8, and in Glasgow 20·5. The corrected death-rate in Dublin was 17·9 per 1,000. It will thus be seen that an exceptionally low mortality was general. This was, no doubt, largely due to the coolness of September, and to the mild equable temperature of October. The cool weather of September checked the fatality of summer intestinal affections, while the warmth of October postponed the winter mortality from diseases of the respiratory system. Among zymotics, fever, diarrhoea, and scarlatina were the most destructive to life in Dublin; while whooping-cough, fever, and diarrhoea, prevailed in Belfast. Of the 20 fever-deaths registered in Dublin, 5 were caused by typhus, 14 by enteric, and 1 by simple continued fever. 10 of the 17 victims to diarrhoea were children under 5 years of age. In London the increasing prevalence and fatality of small-pox gives rise to much anxiety. The deaths from this disease in the four weeks were 16, 22, 15, and 21 respectively.

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.,
for the Month of October, 1876.*

| | | | |
|--|---|---|----------------|
| Mean Height of Barometer, | - | - | 29·858 inches. |
| Maximal Height of Barometer (on 31st at 9 p.m.), | | | 30·428 „ |
| Minimal Height of Barometer (on 11th at 1 p.m.), | | | 28·778 „ |
| Mean Dry-bulb Temperature, | - | - | 52·4° |
| Mean Wet-bulb Temperature, | - | - | 50·0° |
| Mean Dew-point Temperature, | - | - | 47·6° |
| Mean Elastic Force (Tension) of Aqueous Vapour, | | | ·330 inch. |
| Mean Humidity, | - | - | 84·5 per cent. |
| Highest Temperature in Shade (on 6th), | | | 64·6° |
| Lowest Temperature in Shade (on 31st), | | | 36·3° |
| Lowest Temperature on Grass (Radiation) (on 31st), | | | 33·2° |
| Mean Amount of Cloud, | - | - | 72·5 per cent. |
| Rainfall (on 20 days), | - | - | 4·505 inches. |
| General Direction of Wind, | - | - | S. and S.W. |

Remarks.

The cyclone, which caused such a deplorable life-boat accident at Bray on September 30, travelled quickly eastwards and soon disappeared. Barometrical pressure then became low to the west and north-west of Ireland; and a series of cyclonic systems, or areas of low barometer, scudded along our western seaboard towards N. or N.E. Very wet, overcast, and squally weather accordingly prevailed. On the 2nd, 10th, 11th, and 16th, high winds or gales were felt—the storm of the 10th, in which the barometer receded to 28·778 inches, being particularly severe. It was accompanied by distant thunder and by hail. Rain fell in torrents on many days—falls of more than half-an-inch being recorded on the 2nd, 10th, 18th and 19th. From the 18th to the end of the month anticyclonic systems prevailed more or less. They were attended by overcast but dry weather. Owing to the clouded state of the sky, the ranges of temperature were very slight, and no cold weather was experienced until the evening of the 30th, when the thermometer sank quickly, under the combined influence of a northerly current of air and a clearing sky. This N. current was part of the circulation round a deep depression which travelled south-eastwards across Scandinavia on 29th and 30th, and in which the barometer fell to 28·62 inches at the Haparanda on the 30th. Here the *highest* barometer and the lowest temperature were recorded on the 31st. Lightning was seen on the evening of the 14th.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

LEAD PARALYSIS.

M. RAYMOND has published a communication of which the following is a *résumé*:—1. Saturnine paralysis may begin in the extensor proper of the little finger or of the index. 2. In the case of painters the muscles of the right and left hands may be equally paralysed. 3. Muscular contractibility may disappear progressively in the different fasciculi of the deltoid. 4. The short extensor of the thumb often preserves its power of contraction when the other muscles are paralysed. 5. The biceps is sometimes paralysed. 6. The loss of the electric contractibility may precede that of the muscular. 7. Hemiplegia may result from lead poisoning. 8. Chronic lead poisoning may occasion other cerebral troubles, such as choreic and ataxic movements, &c., which are capable of cure. 9. Mercury may produce forms of paralysis similar to those produced by lead. 10. The seat of lead colic is in the coats of the intestine, but muscular pains in the abdominal walls sometimes accompany it.—*Le Progrès Médical*.

S. W.

EXCRETORY FUNCTIONS OF THE LIVER.

At the recent meeting of the International Medical Congress, Professor Austin Flint, jun., read a paper on the above subject. The conclusions he arrived at are reported as follows:—1. Cholesterine exists in health in the bile, the blood, and nervous matter, also in the crystalline lens, in the spleen and in the meconium. 2. Cholesterine is found for the most part in nervous matter, from which it is passed into the blood. The blood gains cholesterine in its passage through the brain. Its formation is constant, and it is always found in the blood. 3. Cholesterine is separated from the blood by the liver and is discharged with the bile. It pre-exists in the blood, serves there no useful purpose, and if it is allowed to accumulate, blood poisoning results. 4. The bile has two separate and distinct functions, to which the so-called biliary salts, glycocholate and taurocholate of soda, contribute; these do not exist preformed in the blood, but are the products of secretion. The second function of the bile is excretion with depuration, this being accompanied by removal of cholesterine, which it obtains from the blood. 5. Normal fæces do not contain cholesterine. The latter substance is represented by stercorine, formerly called steroline, into which it becomes converted in

its passage down the intestine. The conversion of cholesterine into stercorine does not, however, take place when digestion is arrested or when it is not necessary, as is shown by the presence of cholesterine in its own form in the fæces during fasting, and in the meconium. 6. The difference between the two varieties of jaundice—one mild, the other severe—is dependent upon obstruction of the bile ducts in the one instance, with reabsorption of biliary colouring matter, while in the other there is retention of cholesterine in the blood, in consequence of destruction of the parenchyma of the liver. 7. That condition of the blood dependent upon the presence of cholesterine in the blood I call *cholesteræmia*. It is characterised by symptoms referable to the brain, and may or may not be attended with jaundice. 8. Cholesteræmia does not occur in every disorder of the liver, because even when a part of the organ is disordered, there may remain a portion still capable of performing the function of excreting cholesterine. 9. In case of simple jaundice, even where fæces are decolorised, there is an accumulation of cholesterine in the blood. 10. Cholesterine bears the same relations to the liver as urea does to the kidney.—*Boston Med. and Surg. Jour.*

A NEW ADHESIVE PLASTER.

A MIXTURE of twenty parts of mucilage and one part of glycerine constitutes an excellent shining and supple plaster, far cheaper than the resin and diachylon, and lasting more than a year without deterioration. Three or four layers of the mixture require to be spread over each other on the linen or other stuff, allowing sufficient intervals for the successive layers to dry.—*Chemist and Druggist.*

ON THE URINE IN MELANOSIS.

THE black colour of the urine in cases of melanotic disease has been often noticed, but opinions are still much divided as to the nature and origin of the pigment excreted. Dr. F. Ganghofner and Professor Alfred Pibram observed a case in which the urine presented the following appearances:—It was of a yellowish-brown colour, deposited a sediment of lithates, contained neither albumen nor sugar. When treated with hydrochloric acid it became dark brown; this colour was unaffected by the further addition of a drop of solution of chloride of calcium, but several drops destroyed the colour. The urine which, when freshly passed, had a yellow colour, on standing became darker and finally as black as ink. If the urine which had not yet become dark was treated with a dilute solution of bichromate of potash to which some sulphuric acid had been added, there immediately formed in it a black cloudiness, and by degrees it became intensely black. Boiling with chlorate of potash, nitric acid, or other oxidising agents also produced the blackening. If, to the filtered urine, distilled water was added until

its colour was the same as that of another specimen of urine which was rich in indican and of a wine-yellow colour, the colour of the two specimens was equal when hydrochloric acid was added. A drop of chloride of calcium produced no alteration, an excess destroyed the colour. The patient was a woman of fifty-two years of age. The disease began by the degeneration of a pigmented mole on the leg, and lasted about a year. Numerous metastases occurred both in the superficial and deep parts. The particulars of the case during life and the pathological appearances are very fully given. The authors discuss, at great length, the various opinions that have been put forward as to the origin of the pigment in the growths, its relation to that passed in the urine, and the chemical and physiological characters of the latter. The following are the conclusions at which they arrive:—1. The urine of patients suffering from melanotic carcinoma contains sometimes a chromogene, which, on the addition of oxidising agents, as well as on standing in contact with the air, becomes of an intensely black colour. 2. Even while the melanotic growths are extending, the chromogene may transitorily diminish to such a degree that it can no longer be detected by the ordinary reactions. 3. The relative quantity of the chromogene and, consequently, the intensity of the reaction, varies inversely with the quantity of urine passed in 24 hours—i.e., with the quantity of urinary water. 4. But it varies directly with the specific gravity—i.e., with the quantity of solid ingredients. 5. The abundance of chromogene is independent (a) of temperature-fever; (b) of impediments to respiration; (c) of the quantity and quality of the fæces passed, hence no relation to the function of the intestine is discoverable. 6. Besides the chromogene the urine of the case in question contained a considerable percentage increase of indican. 7. The presence of the chromogene obscured the simple indigo reaction with hydrochloric acid and chloride of lime, but after the precipitation of the chromogene this became distinct. 8. It is uncertain whether the chromogene excreted with the urine in melanotic carcinoma is a special pigment or one of the usual urinary pigments in greatly increased quantity. The former view is, however, the more probable for—9. From the urine in question a pigment could be obtained which differed markedly from the known black urinary colouring matters, in its great resistance to the ordinary solvents of the latter.—*Prager Viertel-Jahrschrift*, CXXX., s. 77.

J. M. P.

THE TYPHUS EPIDEMIC OF 1875 AT STOCKHOLM.

THE *Hygiea*, for July, 1876, contains an interesting article from the pen of Dr. F. W. Warfwinge on this epidemic. It is based on the Annual Report of the Provincial Hospital, Hornsgatan, Stockholm, for 1875. During that year, 667 new cases of typhus were treated in the Hospital. The epidemic commenced in December, 1874, in which month 122

patients were treated. The number rose to 254 in March, 1875, after which the monthly admissions declined rapidly to but 9 in September. Of the 667 patients, 449 were males and 218 were females; and 444, or two-thirds of all those treated, were aged between 15 and 40 years. The eminently contagious nature of the disease was abundantly illustrated, as it not infrequently happened that an entire family was admitted in typhus, and large numbers were sent in from various public institutions for the relief of the poor.

No opportunity was afforded during the year of noting the temperature of the body on the *first* day of the disease. Observations on the *second* day were made in only 5 cases, of which 2 showed an evening temperature under $102\cdot2^{\circ}$; 2 between $103\cdot1^{\circ}$ and $104\cdot0^{\circ}$, and 1 of $104\cdot5^{\circ}$. Convalescence set in on the ninth day in *one* case (out of 667); on the tenth day in 4 cases; on the fifteenth day in 94 cases; and so late as the twenty-first day in 4 cases. As regards mortality, 130 patients, or 19·5 per cent., died. The death-rate among males was 21·83 per cent., and among females only 14·68. 6 patients out of 8 with vibices succumbed; and so did 6 out of 10 with bedsores; 3 out of 16 with erysipelas; 7 out of 18 with parotitis; 3 out of 11 with abscesses; and 1 with spontaneous gangrene. Of 48 patients under 15 years of age none died. The death-rate rose from 2·3 per cent. between 16 and 20 years, to 66·7 per cent. above 65 years. The mean duration of illness in 87 fatal cases, accurately ascertained, was 14·47 days. On two occasions death occurred on the *eighth* day. No case proved fatal during the first week.

Post mortem examinations were made in 112 of the 130 fatal cases. The results were as follow:—1. *The Brain*.—Hyperæmia, 53 cases; slight œdema, 39; considerable œdema, 39. 2. *The Lungs*.—Hypostatic congestion, 67 cases; pneumonia, 10; pleuritis, 5. 3. *The Heart*.—Dark fluid blood in the cavities, with few or no loose coagula, 90 cases; fibrinous clots in the cavities, 22; the muscular structure softened, more or less friable, and discoloured, 52. 4. *The Spleen*.—Of normal size or diminished, 24 cases; inconsiderably enlarged, 35; about half as large again as normal, 31; doubled in size, 22; of normal consistence, 13; of slightly lessened consistence, 39; soft, 47; of pulpy consistence, 13; 5. *The Kidneys*.—The cut surface very tumid and discoloured, 35 cases; cut surface slightly tumid and discoloured, 62; hyperæmic, 5; healthy, 10 cases.

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